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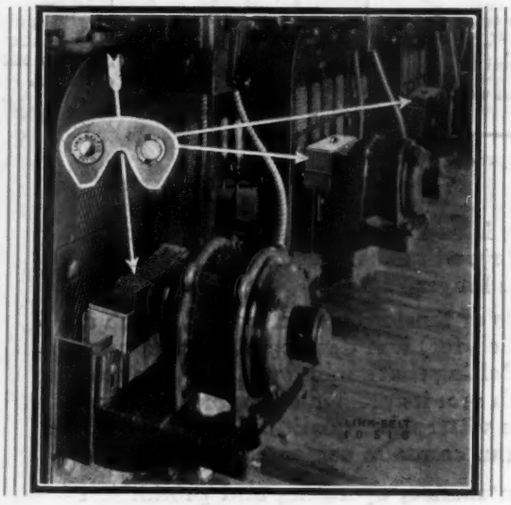
OCTOBER, 1930

COTTON

THE TEXTILE MANUFACTURING JOURNAL

For the POSITIVE Transmission of Power



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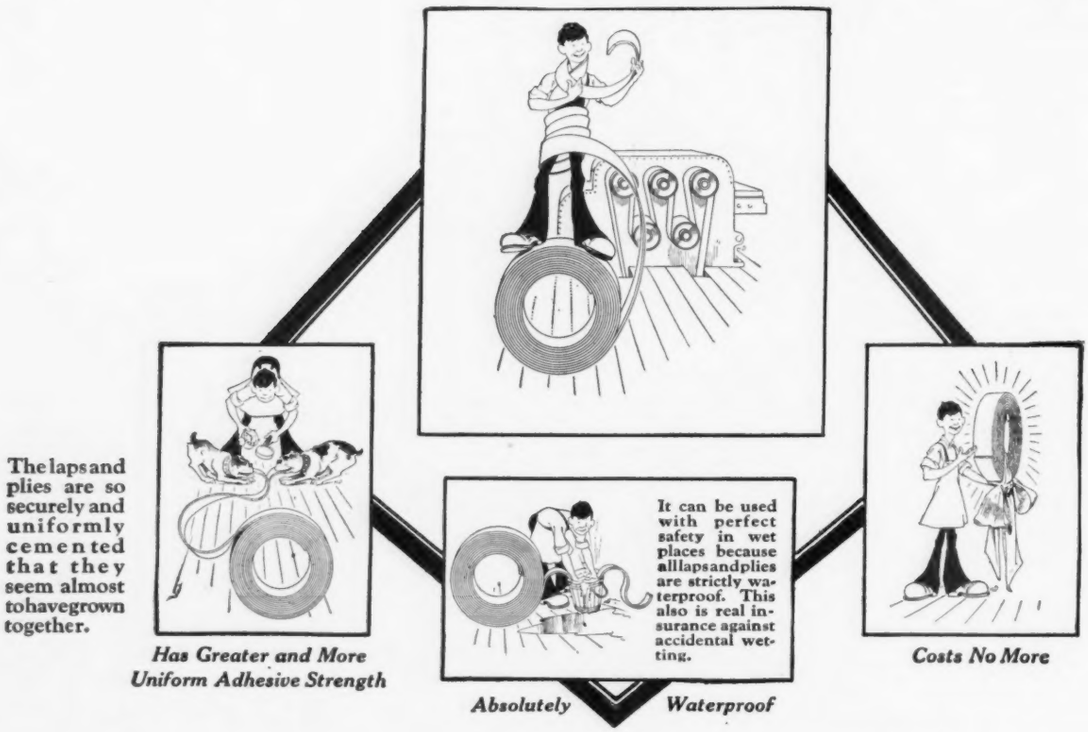
This New *Leather Belting Has Greater Flexibility*


The laps and plies are so securely and uniformly cemented that they seem almost to have grown together.
Has Greater and More Uniform Adhesive Strength
It can be used with perfect safety in wet places because all laps and plies are strictly waterproof. This also is real insurance against accidental wetting.
Absolutely Waterproof
Costs No More
This new and improved Belting costs no more than you formerly paid for our common cemented Belts.

BECAUSE the cement in this *new* Leather Belting is as Flexible as the Leather itself, the constant bending back and forth over the pulleys will not break down the cement. This means that it is a livelier Belt and one that wears longer.

This Leather Belting is made by an exclusive process of tension cementing for which a unique type of Belt making machinery (patent applied for) was developed by our own engineers. This modern, scientific process produces Belting that enables you to make real savings because of its many advantages, some of which are: its greater and more uniform adhesion in laps and plies—its greater flexibility—its waterproof qualities—and the fact that it costs you no more than you formerly paid for our common cemented Belting.

Belting users make a substantial reduction in maintenance, operating and production costs by using the *new* Graton & Knight Leather Belting.

All Belting users are invited to visit our plant at Worcester, Mass., and see in operation the amazing new type of Belt making machinery which is producing this new *Leather Belting.*

OTHER INDUSTRIAL PRODUCTS

Rubber Transmission, Conveyor and Elevator Belting
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Leather Pickers

Lugs and other Loom Straps
Woven Textile Lug Straps
Textile Aprons
Leather Link "V" Belting

Graton & Knight Company

Worcester, Mass.

GRATON AND KNIGHT

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J. W. SWINEY, Associate Editor

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Grant Building, Atlanta, Ga.

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Booth 117 (first floor)
Southern Textile Exposition
Greenville, S. C., Oct. 20-25, 1930.

Here is the *ideal textile motor*.... with "Resistallis"-coated winding and wide-open air passages.... built to prevent the accumulation of lint.... self-cleaning.

"Resistallis" is a special insulation developed by The Louis Allis Co. Applied to the windings of L.A. textile motors, "Resistallis" forms a hard, smooth, and glossy surface to which lint or dust will not cling. Furthermore, "Resistallis" offers *permanent* protection because it does not run, drip, or crack from heat.

In the words of the Chief Engineer of a large cotton mill in Georgia, where 197 Louis Allis textile motors are operating, these motors "*are particularly adapted to cotton mill service*" and "*free themselves of lint in a really splendid fashion.*"

By all means, see this Self-Cleaning Textile Motor in Booth 117. Or, if you do not plan to attend the Southern Textile Exposition, write for complete information.

LOUIS L.A. ALLIS

"CUSTOM-BUILT" *Electric* MOTORS

THE LOUIS ALLIS COMPANY
MILWAUKEE, WIS.
Motor Specialists for 29 Years — Offices in Principal Cities

Southeastern Representatives; Jones Machinery Co., Inc., Atlanta, Ga.

COTTON

Vol. 94 October, 1930 No. 12

The Ninth Southern Textile Exposition

GREENVILLE, SOUTH CAROLINA, will truly be the Mecca for the members of the textile industry during the week of October 20th to 25th inclusive. For that is Show Week, and the Ninth Southern Textile Exposition will be conducted during those six days, at Textile Hall, in "The Textile Center of the South.'

That would seem to be sufficient information for those in the industry who are familiar with the event, but for newcomers and others uninformed, a bit of detail may be of interest.

The Southern Textile Exposition, organized in 1915, is held every two years, in a magnificent building, erected for the purpose, in Greenville. It provides a means of exhibiting to the mills of the South, products of manufacturers catering to the trade of these mills—and the increase in the size of the exhibition, which has occurred with each bi-ennial Show, is striking demonstration of its enlarging importance as an integral part of the industry's growth and progress. For the show in 1924 it was necessary to erect an annex to take care of the unexpected number of exhibits which overflowed the original building. For the next show, in 1926, a steel annex was added, and before the next show was held it was necessary to build a large two-story addition.

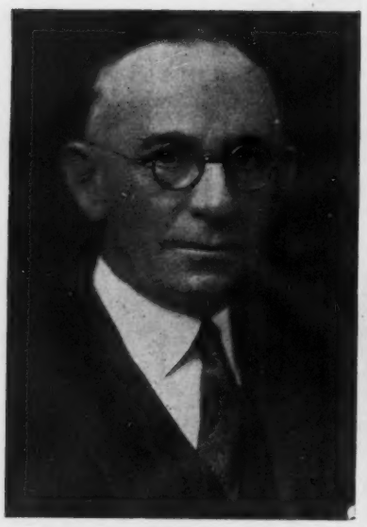
Coming every two years, the Show provides a convenient opportunity for southern mill men to learn of what has been done in the way of new and improved equipment, new supplies, chemicals, etc., and a description of the products displayed at each succeeding Exposition would be an accurate record of the progress that has been made along these lines during the sixteen years that the Show has been staged.

And so this year, the Ninth Exposition this month will clearly reflect the progress of the past two

DROP IN TO SEE US!

At the Southern Textile Exposition, COTTON will maintain headquarters at Booths 7 and 8, in the permanent annex, just inside the front entrance to the annex from the main building.

Representatives of our editorial, business and circulation departments will be in attendance during the week, and our friends are cordially invited to visit our booth and make it their headquarters.



Left, William G. Sirrine, who has been president of the Textile Exposition for several shows; right, Miss Bertha M. Green, the secretary.

years. That it will be complete is indicated by the announcement that approximately two hundred exhibitors will display their latest products. These will include modern machinery of every kind for handling cotton, from the time a bale is opened up to packing the finished cloth for domestic and export trade; as well as supplementary equipment and supplies of practically every usable kind and type. The bleaching and finishing of cotton goods which is now such an important part of southern industry will be given marked attention by a number of exhibitors. Chemistry and dyeing will also figure prominently in the displays.

That this effort on the part of exhibitors will be justified is made certain by the anticipation that more than 20,000 persons interested in textile manufacturing will visit the show during the six days it is in operation. Coming at this time, with business decidedly on the upturn, and every mill man eager to learn of any new idea or process that will aid in girding his plant for the new race, the show will provide an unusual opportunity for both exhibitor and visitor.

Southern Textile Association Program.

As usual, Show Week in Greenville provides the occasion for a number of related events of importance. First, of course, is the Exposition itself, which will be open daily from 10 A. M. to 10 P. M. On Friday, October 24th, the semi-annual meeting of the Southern Textile Association will be held. This organization is composed of the superintendents and department heads of the southern mills, who will certainly attend the Exposition. To allow as much time as possible for the Exposition, the Association has restricted its meeting to one session, which will be held in the ballroom of the Poinsett Hotel, at 11 A. M., on Friday, October 24th, with President J. O. Corn presiding. While the program is brief, it has been prepared with a view to giving full value, as is indicated by the fact that George S. Harris, of the Hunter Mfg. and Commission Company, and C. K. Everett, of The Cotton-Textile Institute, Inc., are the speakers.

Following this session, a luncheon will be held for the Association members and their friends, conducted, no doubt, under the auspices of a Greenville committee, for it is noticed that Edwin Howard of Greenville, who with other Greenvillians has been responsible for several similar events at previous shows, is the presiding officer. A feature of unusual interest is the fact that Dr. H. E. Rondthaler, president of Salem College, Winston-Salem, N. C., will speak at this luncheon.

For those who attend these meetings, and for those who could not get away from the Show to attend them, the Association will conduct an informal dance in the Poinsett ball room, beginning at 10:00 o'clock Thursday night. This will be complimentary to the members of the Association, while others are also invited.

It is announced that Walter C. Taylor, secretary and treasurer of the Association, will maintain headquarters at the Exposition, during the entire week. Mr. Taylor, with two assistant secretaries, will have an office in the large room to the right of the lobby of the building, and during the week of the show there will be someone constantly on duty to greet visiting members of the Association and attend to room reservations, tickets, etc.

Meeting of A.S.M.E. Textile Division.

The Textile Section of the American Society of Mechanical Engineers will hold a convention at Greenville on Wednesday, October 22nd, and this will attract to the Exposition a large number of technical men. It is stated that a distinguished speaker of national reputation will address this meeting.

While hotel accommodations generally will probably not be available for those who do not now have reservations, President William G. Sirrine of the Exposition has made arrangements to provide accommodations in private residences in Greenville, as at past shows. He further announces that an entire floor at the Poinsett Hotel has been set aside for visiting mill executives.

A passenger service for the convenience of manufacturers in North Carolina and Virginia, as well as other southern points, has been announced by the Southern Railway Company. The railroad has agreed to operate during Exposition week, special Pullman cars from Greensboro. These cars will be placed on the side track in Greensboro. Pasengers may occupy their berths from 9 o'clock. Cars will be handled on Train No. 29 and parked at Greenville the day following. Passengers may sleep as late as they please, leaving luggage in their sections while visiting the Exposition. Returning sleepers will be handled on a train leaving Greenville after 10 P. M., and will be parked the following day at Greensboro.

Passengers from the South will have the same convenience of travel by way of Atlanta. Cars will be open early in the evening and leave Atlanta about midnight. A one and one-half fare rate will be granted for the Exposition.

The KENDALL MILLS PROGRAM *of* Inspection *and* Maintenance

Part I.

By H. K. Hallett, General Manager
Kendall Mills Division,
The Kendall Company.

This describes the inspection system used by The Kendall Mills in their program of plant and equipment maintenance. The accompanying representative forms are reproduced to enable the reader to develop a similar system at his own plant, and further information will be furnished upon request.

The present article describes the program of machinery inspection. A later installment will describe the inspection and maintenance of belt and electrical equipment according to this same system.—THE EDITOR.

THE MAINTENANCE of plant and equipment at highest possible standards of efficiency always has been an important factor in the management of production. It becomes increasingly important as mechanization broadens. A carpenter with a small kit of hand tools has a lesser "maintenance" problem than a woodworking shop with $50,000 invested in machinery. Yet even the carpenter, to do a good job, must keep the cutting edges of his planes and chisels keen and fit.

The Kendall Company's philosophy of maintenance is that maintenance and inspection should be done better and better in order that the whole manufacturing job may be done better and better. There are nine plants in The Kendall Company. Each of these plants has a program of maintenance and inspection suited to its equipment, conditions and problems. Five of these units manufacture cotton grey goods in North and South Carolina. The maintenance program for these five cotton textile mills has been developed according to certain recognized principles of modern factory management and out of definite facts of experience. It is not my intent to hold up this program as something perfect, nor would I claim any superiority for it. It works, in the case of the five Kendall mills.

An outline of the program is presented in this article at the request of the Editor of COTTON.

H. K. Hallett, Gen. Mgr., Kendall Mills

Ordinarily, we break maintenance into four classifications:—1, Machine inspection and maintenance; 2, Belt inspection and maintenance; 3, Electric equipment inspection and maintenance; 4, Fire protection equipment inspection and maintenance. The general requirements of insurance companies and their periodic inspections are such that we will omit discussion of the fire protection equipment phase of the Kendall Mills' maintenance program. The present article will be devoted to Machine Inspection and Maintenance. In the next issue, we shall discuss Belt and Electric Equipment Inspection and Maintenance.

Machine Inspection and Maintenance.

The purpose of machine inspection and maintenance is to anticipate and prevent, to the greatest possible degree, interruptions in operation and loss of production due to bad order or break-downs of machinery and equipment. To accomplish this result it is necessary to—

(a) Inspect machinery and equipment at such intervals as will insure detection of misadjustment, wear, or impending breakdown;

(b) Make such repairs or replacements as inspection shows to be necessary;

(c) Keep systematic records of equipment, inspection and repairs;

(d) Keep tickler records to warn of necessity of re-inspection.

Qualifications of the Inspector.

It is essential that the inspector have experience to qualify him as a first-class machinist, with some knowledge of motors. Since his schedule of inspection takes him into all departments of the mill, in contact with overseers, second hands, section hands, loom fixers, etc., his ability should be such as to command respect. He should have the faculty of being able to carry out his program of work in a spirit of complete co-operation with his fellow workers.

The work of the regular inspector is confined entirely to maintenance and it is not intended that his program be extended to the inspection of operating conditions or machine settings, such as are carried on by order of the department overseer. Check-ups on card settings, timing of looms, etc., are not in the regular inspector's bailiwick, but checks on wear of card or loom gears are.

Illustrations of Some of the Forms Used in Kendall Mills' Inspection

Here are some of the forms used in the Kendall Mills' inspection program, on some of the major departmental inspections. The forms and their use are fully explained by Mr. Hallett in the accompanying article.

FORM Nº_____ MACHINERY INSPECTION REPORT

DATE_____ SPINNING TRI-MONTHLY

PRINCIPAL POINTS TO CONSIDER IN INSPECTION	OK	NOTE	REMARKS
1. STEEL ROLLS			
A. SPRUNG (FRONT, MIDDLE AND BACK)		✓	
B. WORN NECKS (PARTICULARLY HEAD ENDS)		✓	
C. LOOSE JOINTS	✓		
D. STANDS (SLIDES) WORN (PART. HEAD ENDS)	✓		
2. CAP BAR NEBS			
A. LOOSE	✓		
B. WORN	✓		
3. LEVERS			
A. WORN	✓		
4. LEVER SCREWS			
A. WORN IN EYE SO LEVER NOT WORK FREELY	✓		
5. STIRRUPS			
A. RUBBING ON FRONT OR MIDDLE ROLL	✓		
6. BUILDER MOTION			
A. ROCKER ARMS BROKEN	✓		
B. PITTMAN ROLLERS STUCK	✓		
C. PITTMAN ROLLERS WORN	✓		
D. CAM SMOOTH	✓		
E. SHAFT TURN FREE	✓		
F. PICK PAWL OR RACHET GEAR WORN		✓	
7. CYLINDERS			
A. DENTED	✓		
B. LOOSE JOINTS	✓		
C. BEARINGS LOOSE	✓		
D. BEARINGS WORN	✓		
E. OIL PIPES TO BEARINGS FREE	✓		

REMARKS:
(1a) 17-27-33-35-37, etc
(1b) 19-27-29-43 etc
(6f) 89, etc

FORM Nº_____ MACHINERY INSPECTION REPORT

DATE_____ Nº 3 ROVING FRAMES ~~SLUB.~~ INT ~~FINE~~ MONTHLY

PRINCIPAL POINTS TO CONSIDER IN INSPECTION	OK	NOTE	REMARKS
1 BUILDER MOTION			
A. DOG JAWS WORN		✓	
B. DOG LOOSE ON SCREWS	✓		
C. BUILDER NOT WORN ROUNDED		✓	
D. REVERSING SHAFT			
1. TWIN GEARS AND PINION			
A. TEETH WORN		✓	
B TEETH BROKEN	✓		
C. SET TOO DEEP		✓	
D. NOT SET DEEP ENOUGH	✓		
E LOOSE ON SHAFT	✓		
2 WORN IN BEARINGS		✓	

REMARKS:
(1a) 1-2
(1c) 5-6-9
(d-1-a) 1-7
(d-1-c) 5-10
(d-2) 4-5-6-7-11

FORM Nº_____ MACHINERY INSPECTION REPORT

DATE_____ ROVING FRAMES SLUB. INT. FINE. MONTHLY

PRINCIPAL POINTS TO CONSIDER IN INSPECTION	OK	NOTE	REMARKS
I. GEARS			
A. ROLL GEARING (HEAD END) FRONT, MID., BACK			
1. SET TOO DEEP	✓		
2. NOT SET DEEP ENOUGH	✓		
3. WORN		✓	
4. TEETH BROKEN	✓		
B. CARRIER GEAR			
1. SET TOO DEEP	✓		
2. NOT SET DEEP ENOUGH	✓		
3. WORN	✓		
4. TEETH BROKEN	✓		
5. STUD WORN	✓		
C. DRAFT AND CROWN			
1. SET TOO DEEP		✓	
2. NOT SET DEEP ENOUGH	✓		
3. WORN		✓	
4. TEETH BROKEN	✓		
5. STUD WORN	✓		
D. SKIP OR TUMBLER SHAFT GEAR			
1. TEETH WORN (ESP. 1ST TOOTH EITHER SIDE OF BLANK)		✓	

REMARKS:
(a-3) 5
(c-1) 8
(c-3) 5, 7
(d-1) 2, 3, 4, 5, 6, 7, 8 - etc.

FORM Nº_____ MACHINERY INSPECTION REPORT

DATE_____ SPINNING MONTHLY

PRINCIPAL POINTS TO CONSIDER IN INSPECTION	OK	NOTE	REMARKS
1. PULLEYS			
A. OUTWARD BEARINGS WORN		✓	
B. FIRST CYLINDER BEARINGS WORN	✓		
C. TIGHT PULLEY LOOSE ON KEYWAY		✓	
D. LOOSE PULLEY BUSHING WORN		✓	

REMARKS:
(a) 22, 23, 27, 30, etc.
(c) 54, 73, 74, 79, etc.
(d) 25, 30, 33, 36, 38, etc.
#88 - cylinder head loose

FORM Nº_____ MACHINERY INSPECTION REPORT

DATE_____ LOOMS BI-MONTHLY

PRINCIPAL POINTS TO CONSIDER IN INSPECTION	OK	NOTE	REMARKS
1. MOTOR DRIVEN LOOMS			
A. PINION LOOSE	✓		
B. PINION WORN		✓	
C. FRICTION DISC GEAR - TEETH WORN	✓		
D. SETTING OF MOTOR PINION	✓		
E. MOTOR TAPERED SHAFT WORN	✓		
2. ROCKER SHAFT			
A. LIFT LAY EACH END - IS SHAFT WORN?		✓	

REMARKS:
(1-B) 70, 687, 658, etc.
(2-a) 569, 570, 576, 577 etc

FORM Nº_____ MACHINERY INSPECTION REPORT

FINISHER PICKER Nº 1

(APRONS, FEED ROLL, BEATER BONNETS, GRID BARS)

DATE _____ 1 MCH EVERY 5TH WEEK

	PRINCIPAL POINTS TO CONSIDER IN INSPECTION	OK	NOTE	REMARKS
1.	FEED APRONS			
	A. TENSION ONE SIDED	✓		
	B. TENSION SLACK		✓	
	C. SLATS BROKEN OR MISSING	✓		
	D. APRON BELTS BROKEN	✓		
	E. APRON BELTS DIRTY	✓		
	F. ADJUSTING SCREWS IN WORKING ORDER	✓		
2.	FEED ROLLS			
	A. BEARINGS WORN		✓	
	B. FLUTES BURRED	✓		
	C. FLUTES DIRTY	✓		
3.	BEATER BONNETS			
	A. BENT	✓		
	B. AIR LEAKS AROUND SHAFT	✓		
	C. IS LEATHER OK OVER FEED ROLLS	✓		
	D. IS SAFETY DEVICE WORKING	✓		
4.	GRID AND CLEANING BARS			
	A. ANY BROKEN	✓		
	B. ANY MISSING	✓		
	C. ROUGH BURRED		✓	
	D. DAMPERS UNDER CLEANING BARS FIT TIGHT		✓	

REMARKS.

Reproduction of inspection form for individual machine inspection on pickers.

FORM Nº_____ MACHINERY INSPECTION REPORT

LOOM Nº 346

DATE _____ BI-MONTHLY

	PRINCIPAL POINTS TO CONSIDER IN INSPECTION	OK	NOTE	REMARKS
1.	CRANK SHAFT			
	A. BOLTS OUT OF BOX CAP	✓		
	B. BOLTS LOOSE IN BOX CAP	✓		
	C. BOX LOOSE	✓		
	D. BOX WORN	✓		
	E. SHAFT WORN	✓		
	F. PITTMAN ECCENTRIC PINS WORN	✓		
2.	HEAD END GEAR			
	A. WORN		✓	
	B. LOOSE ON SHAFT	✓		
	C. GUARD BROKEN	✓		
	D. GUARD MISSING	✓		
3.	PULLEY - (LOOSE)			
	A. BUSHING WORN	✓		
4.	CAM SHAFT			
	A. BOXES LOOSE	✓		
	B. BOLTS LOOSE	✓		
	C. BOLTS MISSING	✓		
	D. BOXES WORN	✓		
	E. SHAFT WORN	✓		
	F. GEAR WORN	✓		
	G. GEAR LOOSE ON KEY-WAY	✓		
	H. CAMS WORN	✓		
	I. TREADLE ROLLERS WORN OR STUCK	✓		

REMARKS

Individual loom inspection form.

Arrangement of Forms-Tickler File.

For the most part, all forms call for only "Yes" or "No" notations. On an inspection sheet that covers only one machine the inspector places a check mark in the "Yes" column opposite the items that need attention. If no defects or alterations are found his check marks go in the "No" column. If more than "Yes" or "No" is necessary, check is entered opposite such items in the Remark column and report in detail is made in the space for "Remarks" at the bottom of the sheet. Also under "Remarks" the inspector notes any unlisted defects or alterations which need attention. This last step helps check the usefulness of forms. They need revision periodically. Any system is the better for check-ups and revisions. Experience is the judge of the value of any type of production practice. If the inspection covers a number of the same kind of machines such as looms or spinning frames, the Report lists by numbers the principal points to consider, but the condition of the individual machines will be reported in this fashion:—

Loom No. 1	Item No. 2
Loom No. 5	Item No. 1—b—c
Loom No. 95	Item No. 3—a—f

Arrangement of the inspection forms in a tickler file requires careful consideration, because it involves such questions as frequency of inspection and time element of the inspection itself. Looms may occupy three or four days. Other machinery must be inspected week-ends. Some equipment should be inspected weekly. For other items, one inspection every six months is enough.

The tickler file provides for the 12 months, with daily tabs for the active month. At the beginning of the year the days of each month are listed and the form numbers for the various reports are listed beside the predetermined dates.

Examples of Arrangement.

Here is an example of the arrangement of the forms in the tickler file:—

June—1927
1—
2—
3—241
4—205, 206, 207
5—Sunday
6—228,245,246
7—231
8—
9—200, 219
10—238, 241
11—205, 206, 207, 221, 227
12—Sunday
13—218, 220, 222, 223, 228
14—211, 212, 213, 231
15—215, 214½
16—240
17—241
18—205, 206, 207, 250
19—Sunday
20—208, 209, 228, 245, 246
21—225, 226, 231, 232
22—225, 226
23—233
24—241
25—202, 203, 204, 249, 251, 252
26—Sunday
27—228
28—231
29—
30—

At the end of June a clerk places the proper form numbers behind the dates in the tickler file for July. And so on, through the year.

For ready reference, forms are listed in numerical

order which follows the chronological sequence of factory operations.

Form No.	200—Openers	Month	
" "	201—Waste Machine	6th	Week
" "	202—Breaker Picker	5th	"
" "	203—Breaker Picker	5th	"
" "	204—Breaker Picker	5th	"
" "	205—Finisher Picker	5th	"
" "	206—Finisher Picker	5th	"
" "	207—Finisher Picker	5th	"
" "	208—Cards	Month	
" "	209—Drawing	Month	
" "	210—Drawing	2 Months	
" "	211—Speeders (Slub. and Int.)	Month	

Etc.

Routine and Method of Inspection.

Every morning the inspector goes to the plant maintenance tickler file and takes out the inspection forms for that day only. The following morning he gives one copy of the previous day's report to the overseer concerned. The other copy goes to the office. The inspector's duties cease with the reports and their findings.

The office copies of the reports are held until the overseer turns in his copy with notation that the work has been done. Then the two copies are filed together. It is the duty of the manager or assistant to make occasional check-ups on items reported by the overseer as corrected.

There are times when in the opinion of the overseer and mill manager it is neither desirable nor economical to carry out the inspector's recommendations. When this occurs, the reasons for the decision are stated on the file copy. However, an overseer's disagreement with a given recommendation by the inspector does not necessarily constitute a criticism of either. The inspector's duty is to report clearly conditions as he finds them, leaving it to his superior's discretion as to whether or not his judgment should be followed.

Procedure for Internal Inspection.

Some machinery requires internal inspection and the inspector hasn't the time to take it apart unaided. There are three or four such examples which are worth while mentioning. For example, Forms No. 202, 203, 204, 205, 206, 207 concern Pickers. A mill has five pickers. One is taken down and thoroughly cleaned every week. Consequently the inspector is able at this time to make his inspection. Each picker is thus covered every fifth week. Form No. 214½ includes the compounds on all slubbers, intermediates and fine frames which are overhauled every six months, on a night and day basis. At this time, the inspector makes his report on all compounds. If later it is decided six months is not often enough a section man takes apart so many compounds each Saturday night for the inspector until all are completed.

Forms 233, 234, 237, 242, 257 have to do with inspection of valves on steam pumps, triplex pumps and air compressors. Obviously they cannot be examined unless the machines are taken apart. These are overhauled every three months and the plant maintenance man makes his report. These forms are in the tickler file and come up regularly every three months thus acting as a reminder to the master mechanic that it is time to do such overhauling.

In the next installment of this article, to appear in an early issue, Mr. Hallett will describe the Kendall program of belt and electric equipment inspection and maintenance. —The Editor.

Some Recent Styles in Cotton.

These photographs, furnished through the courtesy of The Cotton-Textile Institute, Inc., show four of the styles exhibited at the recent Worth Sreet Trade Conference in New York City, of spring and summer cottons for 1931.

The SPINNING RING

Fig. 1. A Plain Double Flange Ring.

By "Flange"

THIS IS a thoroughly practical discussion of spinning rings which is certain to add to the knowledge of the reader on the subject. It tells briefly how rings are made, and why they are made that way; how to select the right kind of ring for any given work, and the various things that influence the selection; it discusses the tendency toward narrower flanges; covers the single-versus-double flange discussion; and discusses the installation of rings, as well as practical problems arising in their use.

A later article, of a like character and by the same writer, is planned for a subsequent issue, discussing the twister ring.—THE EDITOR.

THE PRIMARY FUNCTION OF the spinning ring is to provide a bearing surface for the traveler. As a high-speed bearing it is unique in that, except for certain classes of work, it supports a moving part of like material without lubrication. Even with the recognized conditions of high speeds and absence of lubricant the satisfactory performance and service of the ring are taken so much for granted that in many cases it suffers neglect and consequent abuse. It is remarkable the ring so rarely fails to give the service expected.

The purpose of this article is not to state the diameter, flange, and type of ring that should be used for best results under any and all operating conditions and requirements, nor to lay down infallible rules for obtaining the most satisfactory service from the ring. Rather, it is an attempt at a sympathetic discussion of the conditions under which spinning rings are used, and in relating the various problems, practices, and experiences the author may be considered more as a compiler and dispenser than as an originator of ideas.

Ring Manufacture and Structure.

Steel containing only two-tenths to three-tenths of one percent carbon is used in ring manufacture. Various other elements are in this steel, the formula depending upon the ring maker's idea and experience in producing the most satisfactory ring from every standpoint. The steel reaches the ring shop in bar form and is transformed into ring shape by bending and welding, or piercing and rolling, or impressing by means of dies. After the stock has been made into a circular blank approximating the size ring desired, especially designed lathes and tools are used in cutting away the surplus stock and turning out the ring flanges.

It is at this point that the ring is changed from a low carbon or soft steel article into the hardest piece of metal found in the mill. A number of rings are packed in carbonaceous material and heated in electric or fuel fired furnaces to approximately 1700 degrees Fahrenheit. The carbon unites with the steel and submergence in a quenching bath cements the carbon-steel union. The surface of the ring then contains about one per cent carbon, the carbon content gradually decreasing toward the center of the ring stock. Thus rings have a very hard shell, approximately .015-inch thick, and a softer core, this core being necessary to avoid brittleness. Rings could be made harder if in transportation, installation, changing travelers, etc., they were handled carefully so that breakage would not result.

After hardening the rings are polished. Special machines hold and revolve the rings at a high rate of speed, fine abrasives being brought into contact with the surfaces of the rings. The rings are then ready for the travelers.

Selecting the Ring for the Work.

The first question with regard to the spinning ring that occurs to a spinner planning to spin a certain number of yarn is the size ring he should use for best results. The spinner wants the size ring that will allow him to run the frames at the highest speed, that will wind on the smoothest yarn, and will give him a large enough package to allow doffing and the subsequent processes of spooling, winding, and reeling to be performed economically. These requirements of production, quality, and economy often conflict, so that the spinner has to strike a happy medium in ring size to fulfill what he can of all of them. It is only the frames on which the filling for the looms is spun that the ring size is definitely fixed, for every spinner knows it is a handicap to use a filling ring more than 1/16-inch larger than the bobbin the shuttle can hold.

In trying to determine this happy medium so many factors have to be considered that it is impossible for a table to be prepared covering the size ring that should be used under all conditions. For a given number of yarn the gauge of the frame, as much as any

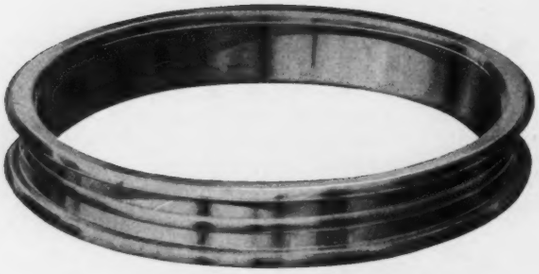


Fig. 2. A Ribbed Single Flange Ring.

one thing, affects the size ring that can be used. The old adage that "you cannot have your pie and eat it too" is particularly applicable here. Increase the ring size too much on the narrow gauge frame and production is decreased. Example: A mill spinning 40s combed warp yarn, 1-3/16-inch cotton, 1-13/16-inch ring, gauge of frame 2¾inch, 8-inch traverse, no separators, diameter barrel of bobbin 11/16-inch, obtained a roll speed of only 97 r.p.m. The roll speed could have been 135 r.p.m. with a 1⅝-inch ring and 6½-inch traverse. To show the possibilities of the larger ring on the wider gauge frame take this example: A mill on 26s combed hosiery yarn uses a 2¼-inch ring, 1¼-inch barrel bobbin, 7-inch traverse, gauge 3¾-inch, no separators, and has splendid running work with a roll speed of 165 r.p.m.

Ring diameter, gauge of frame, and length of traverse are interdependent factors and have to be adjusted to each other. The diameter of the barrel of the bobbin also affects the size ring that can be used. A small barrel bobbin, say 11/16-inch and less for warp yarn, means that the yarn must make a sharp angle from the traveler to the bobbin, resulting in unnecessary strain on the yarn. In this magazine a table was published recently showing the angle of yarn pull for various sizes of rings and bobbins.* That table should not be discarded. Whenever more yarn is desired on the spinning package, and the gauge of the frame will permit, it is advisable to use a larger ring than to decrease the bobbin diameter. A fact often overlooked by spinners is that an increase of, say, ⅛-inch in ring diameter means much more yarn on the package than the same decrease in bobbin diameter. The reason is obvious and is shown by the sketch in Figure 3. By increasing the 2-inch ring, *B*, to 2⅛-inch diameter the shaded area representing the yarn added to the package is .81 of a square inch. By decreasing the diameter of the 1-inch barrel bobbin, *A*, to ⅞-inch only .37 of a square inch is allowed for increasing the yardage of the package. Since volume is directly proportional to area, more than twice the yardage is added by increasing the ring size than by decreasing the bobbin size.

Spindle speed influences the size ring that can be used. Where high spindle speed is necessary or desired a smaller ring is required than would be the case with lower speed. On the larger ring the traveler has a greater distance to traverse with each revolution of the spindle, which leads to burning off of the travelers. A mill using a 5½-inch ring for spinning 2½s, spindle speed 3,100 r.p.m., has this trouble.

Air-friction must be taken into consideration in discussing ring size. Undoubtedly the passage of the yarn through the air at higher circumferential or peripheral speed where large rings are used causes more fibers to radiate from the body of the yarn, resulting in a more "fuzzy" yarn than would be produced on smaller rings.

The machinery builders' recommendations as to ring size often seem conservative, but those organizations have determined the fallacy of trying to use a ring of too great diameter, whereby the economies of doffing, spooling, etc., are more than offset by poorer quality and decreased production. A great deal has been accomplished during the past few years by certain machinery builders in the development of large package spinning, the frames designed for this purpose having wide gauge and an improved design of separator. The size ring that can be used on such frames is considerably larger than can be used on the majority of those now in operation.

A good general rule is this: Where separators are used on the spinning frame allow an inch between the space of the frame and the ring size. Thus, on a 2¾-inch gauge frame a 1¾-inch ring is large enough for best results. Where separators are not used allow 1½-inch between the gauge and the ring size. On a 3¼inch gauge frame without separators a 1¾-inch ring is large enough for best results.

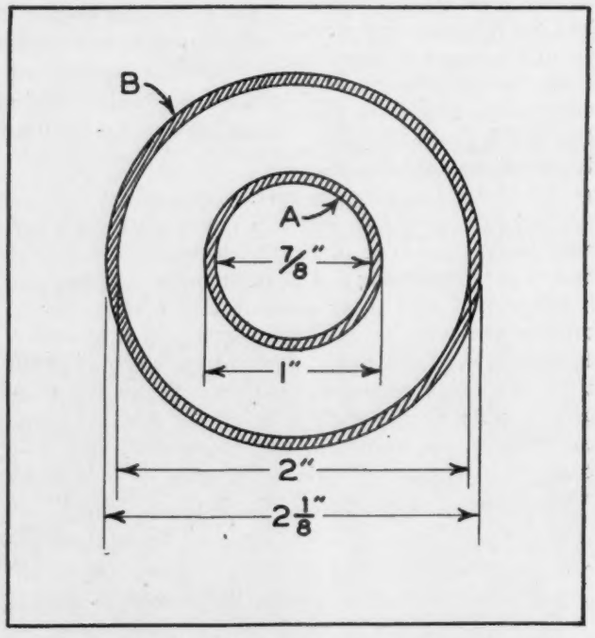


Fig. 3. Showing Relative Amounts of Yarn Added by Increasing Size of Bobbin and Ring.

The next consideration in selecting the ring for spinning the required number of yarn is the width of the flange. For remembering just what "flange number" means take this simple rule: Add three to the flange number and the result is expressed in thirty-seconds of an inch. Thus, a No. 1 flange is three plus one or 4/32-inch wide, a No. 2 flange 5/32-inch wide, etc.

*"Relation of Spinning Ring Diameter to Bobbin Diameter for Good Running Work," page 324, January 1930 COTTON. Clippings of this will be sent to those requesting them.

The inclination to use a narrower flange ring for spinning the coarser yarns has come about because of the increased spindle speeds of the last few years. The object is to get more stock in the body of the traveler to withstand the harder usage, for traveler trouble and wear announce themselves almost at once while the wearing of the ring flange can go unnoticed for several years. It is not unusual to find 20s being spun on No. 1 flange rings, whereas 40s was formerly the dividing line between the use of the No. 1 and No. 2 flange. One successful spinner advocates the use of the No. 1 flange for as coarse as 8s. The limiting factor in this connection is that of getting so much stock, to get the required weight for the coarse yarn, in the short No. 1 flange traveler that there is difficulty in forcing the traveler on the ring, and breakage of ring flanges is likely to result. There is also the question of sacrificing the ring needlessly to benefit the traveler, for the bearing surface and stock of the ring are reduced in the narrower flange. The size of the ring influences to some extent the flange to be used, for a larger ring requires a lighter traveler than a smaller ring, under the same operating conditions, and in extreme cases it might be advisable to use a narrower flange than that recommended in order to shorten and strengthen the traveler.

Fig. 4. A Common Ring.

For spinning finer than 28s it is good practice to use the No. 1 flange, from 8s to 28s the No. 2 flange, from 4s to 8s the No. 2½ flange, below 4s the No. 3 flange.

The single flange or double flange ring, held in cast iron holder or steel plate, is usually used for spinning cotton yarn. A ribbed single flange ring is shown in Fig. 2, and a plain double flange ring in Fig. 1. Several successful spinners use what is known as the common ring, shown in Fig. 4, this ring being made with base attached and requiring no holder other than the screw in the ring rail. This type is used more commonly for twisting than for spinning.

The question is often asked: Is the double flange ring more economical than the single flange ring? The reason for asking that question is that several difficulties arise with the use of the double flange ring. For instance, when the section hand finds an end that will not run satisfactorily he sometimes reverses the ring. Enough of this practice can make a spinning room run very badly, for the travelers on the reversed rings will pull much more heavily on the yarn than will the travelers on the other rings. Again, when all the rings are reversed after several years' usage the unused flange is rough from exposure to humidity, varying temperatures, perspiring hands, etc. It is hard to "break in" a set of reversed rings. Again, it has been found that the life of the second flange is not as long by 30 to 50 per cent as was that of the first flange. Why? Because rust, perhaps just an almost invisible pit, has eaten into the case-hardened shell of the second flange and reduced the wearing qualities. Just here let it be said that it is a mistaken idea that the heat generated by the traveler running on the first flange draws the temper from the second flange. Several hundred degrees of heat are required for annealing a ring, and it is evident that sufficient heat for annealing generated by a traveler running on the first flange would soften and destroy that flange before the second flange could be affected.

The price of the single flange ring is the same as that of the double, and the answer to the single versus the double flange is simply that the double flange is more economical if handled properly. Well-managed mills do not allow rings to be turned here and there in the room. Whenever a ring wears so much that it has to be turned it is taken to a particular frame and fitted with the proper traveler. A ring in the same condition as those all over the room is then put in where that first ring was taken out. This system prevents having travelers pulling at varying tensions all over the room. To avoid the trouble experienced in reversing an equipment of rings many progressive mills return the rings a few frames at a time to the ring shop for repolishing. This operation costs from three to five cents per ring and is an economy in the long run, saving travelers, time, and waste.

An ingenious method developed by a southern mill is designed to procure all the advantages of the double flange ring and none of the disadvantages. This mill buys the double flange ring but has the ring maker polish only one flange. The unpolished flange cannot be used so that the trouble experienced when rings are turned here and there is eliminated. When the first flange wears to the point where reversing is required a notch is ground in the worn flange to prevent re-turning, the rings are sent to the ring shop and the second flange is polished. This second flange will have better life than the usual second flange for this reason: Each polishing operation removes some of the case-hardened shell or wearing surface of the ring. By this system the second flange receives only one polishing, not two as is the case with the completely finished and repolished ring. Also, the rusting or pitting will not go as deeply into the unfinished flange as it would into the finished flange. From a cost standpoint the half-finished double ring, after repolishing the second flange, costs the mill about six cents more than one single flange ring, and from eleven to twenty cents less, depending on size, than two single flange rings.

Installation and Operation.

When new rings are received at the mill they should not be used as supplies, i. e., used to replace worn rings here and there over the room. New rings should be installed systematically, preferably not less than a frame at a time, and the best of the replaced rings used to replace worn rings in the other frames.

It is important when installing new rings to have the frame levelled and aligned, ring rails levelled lengthwise and crosswise, worn lifting rods and bushings replaced, spindles plumbed, and guide wires set. Elimination of vibration in the spinning frame assures longer ring life.

New rings are covered with a thin film of oil to

prevent rusting in transit and storage. Any excess oil should be wiped off with clean waste. It is a mistake to use whiting or other cleaning material to remove all this oil. Whiting often sticks under the ring flanges and retards the motion of the traveler, while a little oil remaining on the ring enables the traveler to start more easily.

A ring is like an automobile—the service it renders depends to a great extent on how it is broken in. Polish on rings has been improved so much that almost no trouble is experienced in starting up new rings. Even so it is best to change travelers often during the first week. When travelers begin to wear part of their metal is deposited on the ring, resulting in an uneven surface and causing wearing of the ring.

Just as it is important to overhaul the frame thoroughly when the rings are first installed just so is it important to have the frame overhauled at regular intervals thereafter. Many mills have their spinning overhauled every six months, others every twelve, which is as long as spinning should run without overhauling. A ring cannot be expected to give best results when bolsters are worn, ring rails are tilted, spindles are off center, etc. And crooked, wobbling bobbins will cause excessive ring wear as much as any of these conditions.

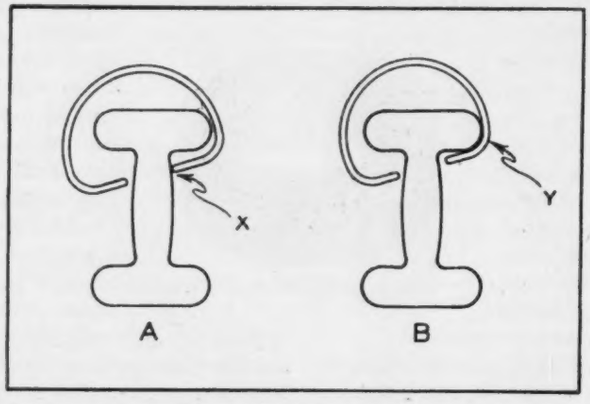


Fig. 5. Showing Result of Change of Traveler. (See text).

Problems and Practices.

In a recent spinners' meeting the question of cleaning rings was discussed. One spinner stated that rings should never be cleaned unless they are to be reversed, and, within limits, this seems to be the sensible idea. The limits of this idea are reached when bad work results from the bottom of the rings, the holders, and the rails being dirty. Black yarn can be caused when doffing by the bottom of the rings and holders being covered with gummy substance, and in such cases cleaning with a stiff brush is the remedy. Otherwise, nothing is added to the running quality of the ring by boiling it in a lye or other solution. Instead of helping such treatment can caused increased rusting of the ring flange not being used. When the rings are to be reversed they should be repolished at the ring manufacturer's shop, but if this is impossible hard rubbing with pulverized pumice stone is a good cleaning method. Kerosene and gasoline should never be used for cleaning rings. These agents induce rusting, roughening, and while some spinners may contend they have been used successfully where coarse yarns were being spun trouble would have been evident on finer work. Often we have heard venerable gentlemen, who have violated many laws of nature, boast of their good health and general well-being. In how much better condition those men would have been had they observed commonsense rules of health is always a pertinent question, and one that applies as well to the care of rings.

The question of fitting the traveler to the ring is an all-important one. The tendency of thoughtful spinners is to use a small circle traveler. This type will not lean or tilt as much as the large circle traveler and thus can move with greater freedom on the ring flange. Also, the small circle traveler will not bear on the outside of the ring web as the large circle will do. Bearing on the outside of the ring web gives the traveler a fluttering motion and freedom from this gives the small circle traveler an evener motion around the ring. The result from the standpoint of the ring is that longer ring life is obtained where small circle travelers are used.

A good spinner made the point that the use of the square point traveler invites the use of a larger circle traveler than should be used for good running work and long ring life. The reason is that a square point traveler is harder to snap on the flange than is the round point, and to facilitate putting on the square point a larger circle is procured. A square point traveler will not run as easily on the ring as will a round point, so that a lighter square point traveler has to be used for the same work. The fact that the yarn goes under one side and out the other side of the traveler causes the traveler to lean to one side so that the square point traveler will present a sharp corner to the ring, while the round point traveler is rounded to allow for this leaning.

A spinner of 2s on a No. 3 flange ring found that the point of the traveler was bearing on the inside of the ring web and the body of the traveler was not bearing on the ring flange. He had the traveler company shorten the point of the traveler so that it cleared the ring web and allowed the body of the traveler to bear on the flange. In Fig. 5, *A* shows the original condition and *B* the condition after the style of the traveler was changed. In the first case very rapid wear of the rings was resulting because of the sharp bearing of the point of the travelers, while the bearing of the traveler being distributed over a larger surface in the latter case satisfactory ring service was procured.

Why do rings wear irregularly, wavily? The answer is rarely to be found in varying hardness of the ring structure. Most of the waviness can be attributed to vibration. When a frame vibrates it does so periodically, regularly, and this vibration is imparted to the ring and its high-speed traveler. The result is evident. Yarn 'ballooning against the separators is another cause of waviness in the ring. When the balloon hits the separator blade and is flicked in toward the spindle a consequent flicker is produced in the motion of the traveler. Again, yarn varies consider-

Cast Iron Ring Holder.

Steel Plate Holder.

ably in evenness, inch for inch. The heavier places will balloon more and pull the traveler harder against the inside of the ring, while the lighter places in the yarn will relieve some of this bearing. Changing of the traverse from full to empty bobbin, especially on filling wind, means continual change in tension and so in the bearing of the traveler on the ring. Smooth, gradual wear in a bearing results from steady motion and bearing of the moving part, and not from such varying, irregular contact as the traveler makes with the ring.

Rings used for spinning filling usually wear faster than those on the warp frames. Also, rings used on very fine yarns, say 80s and finer, wear more rapidly than rings on coarser work. There are several reasons for this. The smaller rings on the filling and on the fine numbers cause the travelers to change direction more sharply than is the case on the larger rings. On filling and fine numbers lighter and consequently softer travelers are used, and the softer travelers wear the rings more than the hard, heavy travelers. Again, the light travelers do not exert the decided firm bearing on the rings that the heavy travelers do. The filling and fine numbers are spun with a filling builder. The varying tension and bearing caused by the traverse changing rapidly from empty to full bobbin have been mentioned in a preceding paragraph.

In a recent article in the discussion department of this magazine the statement was made that worn rings are a cause of "fuzzy" yarn because in moving over the uneven surface of a worn ring the traveler produces a sawing action on the yarn that causes the fibers to radiate from the body of the yarn. That appears to be a reasonable opinion. While, as stated, the motion of the traveler is rarely smooth and even, more irregularity in its motion occurs when running on a badly worn ring.

A thoughtful superintendent asked why rings could not be made of "stainless" steel, so that the flange not in use would not be damaged by years of exposure. Ring makers have experimented with this and have found several reasons why this cannot be done. Such chromium and nickel alloy steel cannot be machined as smoothly as required for spinning ring purposes, it cannot be hardened to the required degree without losing its stainless properties, and its cost is prohibitive. Such a development may be worked out in future years.

The question of the roundness of rings is one that is heard now and then. Rings are warped, made out-of-round, by the plunge from the furnace into the quenching bath. Many tests have been made to determine how much out-of-roundness affects the running quality of the ring. One machinery company ran a series of tests on rings .022-inch out-of-round, and after the number of ends down on those rings was found to be considerably smaller than where round rings were used the man conducting the test asked his company, "How much out-of-round do rings have to be to be perfect?" Various ring makers have overcome this warping to so large an extent that the question of roundness is not as pertinent as formerly.

A word must be said about the ring holders. Where the steel plate holder is used and the ring is held by two or three lugs punched out of the plate care should be taken that these lugs are not pressed against the ring hard enough to throw it out of shape. Often the traveler wearing the ring at three places on the outside of the ring web is caused by the tightly pressed lugs forcing the ring into clover-leaf shape. Where the cast iron holder is used the shoulder on which the ring seats should not protrude flush with the inside of the bottom ring flange. A sixteenth of an inch is ample width for the ring seat and the clearance between the holder and the bobbin should be as much as possible. This will also allow a ⅛-inch larger ring, made of special design for the purpose, to be fitted into the holders being used. Many mills have installed 1¾-inch rings of this special design in their 1⅝-inch holders.

Traveler cleaners should be set to the rings whenever the frames are overhauled. Just how close this setting should be can be determined by holding a traveler firmly against the inside of the ring opposite the cleaner and bending the cleaner until it barely clears the traveler. From this setting a gauge can be made for setting all the cleaners. This is an often neglected "little thing" but is highly important wherever travelers load with lint.

Had You Thought of This?

"An ingenious method developed by a southern mill is designed to procure all the advantages of the double flange ring and none of the disadvantages. This mill buys the double flange ring but has the ring maker polish only one flange. The unpolished flange cannot be used, so that the trouble experienced when rings are turned here and there is eliminated. When the first flange wears to the point where reversing is required, a notch is ground in the worn flange to prevent re-turning, the rings are sent to the ring shop and the second flange is polished. This second flange will have better life than the usual second flange for this reason: Each polishing operation removes some of the case-hardened shell or wearing surface of the ring. By this system the second flange receives only one polishing, not two as is the case with the completely finished and repolished ring. Also, the rusting or pitting will not go as deeply into the unfinished flange as it would into the finished flange.

"From a cost standpoint, the half-finished double ring, after repolishing the second flange, costs the mill about six cents more than one single flange ring, and from eleven to twenty cents less, depending on size, than two single flange rings."

The above is quoted from the accompanying article, which is chock full of such information that will be useful.

Functions *of a* Laboratory *in a* FINISHING PLANT

1. *Control of Operations*
2. *Control of Chemical Supplies*
3. *Experimental Technical Development*
4. *Furnishing Technical Advice*

By **J. A. Clark**
Chief Chemist, Dutchess Bleachery, Inc.

A PROPERLY EQUIPPED laboratory is a necessary adjunct to the modern bleachery and finishing plant. In this article, Mr. Clark tells how such a laboratory, properly operated, can render distinct service in many practical ways, when its activity is tied in with the functioning of the processing departments of the plant.—THE EDITOR.

IN CONSIDERING the design and organization of a bleachery laboratory, it is best perhaps to survey its functions and contacts with the plant and management. These functions in this bleachery have been divided as follows into: control of operations, control of chemical supplies, experimental technical development, and the furnishing of technical advice to the management.

The control of operations starts immediately with the order to finish cloth and proceeds with the cloth throughout its trip through the plant to the packing room. Immediately on receipt of a finishing order, a sample of all special grey goods is sent to the laboratory for identification as the grey described in the order. When, however, these goods contain colored yarn or special fibers, or need modified processing, the grey should always be tested in the laboratory before any operations start. Failure to do this, invariably causes damage claims or loss in yardage through failure of foremen or operatives to recognize the necessity of changed routings with consequent damage at some step in the finishing. This preliminary testing in general then assures the planning department that it can issue departmental work sheets in safety. Again, the laboratory makes contact with the grey room when damages arise or are found during the finishing that indicate damaged grey goods.

Today, many types of cloth start their trip through the bleachery with a de-sizing treatment. This is mainly for the removal of starches and consists of passing the goods through an enzyme bath, followed by piling for a definite period of time. The laboratory controls the various factors, such as concentration of enzyme, temperature, and time of piling by suitable tests, periodically performed. At one time, a plant had difficulty with incomplete starch removed in certain fabrics. The cloth, after passing through a gas singer, was quenched in the enzyme solution, but in passing through the flames, the fabric acquired sufficient heat to maintain the quenching liquid above the lethal temperature. This elevated temperature resulted in such lowering of enzyme efficiency as to show almost no de-sizing. The installation of a recording thermometer at this point corrected the trouble, after which the operators were able to maintain very good temperature curves on their charts by manual control.

Most bleacheries have an acid house or a department where the chemicals used in quantities during the bleaching are made up. While the laboratory may or may not have direct charge of the labor, it invariably has direct supervision of the chemical operations. The solutions made up in the acid house are usually kier charges, sours, chemic, de-sizing solutions, and the ammonia wash.

The kier charges are ordinarily made up here in tanks and after filtering are piped to the kier room. Should the caustic liquor be taken from a large supply tank, it is necessary to test this in order to make up these charges accurately, but if each kier charge is made up independently, it is seldom necessary for the laboratory to test them each time. It is good practice, however, to test them periodically before and after filtering, for lime content, inasmuch as this test will show the efficiency of the filters used to filter out the lime soaps that may form due to any slight hardness of the water used in making up the charges. The sours used in a bleachery are usually tested simply for acid content to assure uniformity of operation.

Most plants have replaced their lime chemic with one of the various soda chemic solutions, which are rigidly controlled for active chlorine and alkalinity content with the laboratory maintaining these values within narrow limits.

The de-sizing liquids can be made up advantageously in the acid house and here again the laboratory tests samples to maintain definite enzyme strength in the liquid being fed to the singer quench-boxes or pads for de-sizing.

The ammonia washes are tested for strength by titration periodically much the same as the sours.

Every step in the bleach house should come under some sort of laboratory control, whether it consists of furnishing indicators for testing the washes or advice

in handling troublesome problems. Each washer should be supplied with indicators to show complete removal of chemicals. The indicators are widely used in bleachery practice and are made up in the laboratory. Special reagents are also furnished the bleacher for indicating some of the common faults such as iron, and starch, in order to facilitate plant operation.

From time to time, as the necessity arises, either through unsatisfactory operation or submission of a new type of cloth, it is well to check the efficiency of the bleaching operations by the analysis of samples from each step. With the laboratory following the cloth in this manner, information of value is secured either for corrective measures or suggested routings.

The laboratory is of value here in the rapid and accurate analysis of spots, stains and other defects that occur. While the analysis in itself may only solve the particular trouble of the moment, it may, coupled with intelligent cooperation of foremen, help to correct plant evils. The laboratory must not only find the cause but when possible, submit a procedure for correction of the lot in order for it to proceed on schedule.

The mercerizing department should be entirely laboratory controlled, at least in regard to the caustic operation. We find the laboratory then analyzing the strong caustic periodically, while the operator or laboratory assistant is required to record the indicated strength of caustic for each lot of cloth. The weak liquor if used in making up kier charges, is also analyzed for two reasons, i. e., credit to mercerizing department and to insure the proper caustic strength of the kier charge.

This testing insures against the operatives travelling the road of least resistance, and helps to prevent mercerizing with caustic of variable strength. Inasmuch as it is well known that cotton acquires a changed affinity for dyestuff with the degree of mercerizing, emphasis cannot be too strongly placed on the control of this factor when goods are to be dyed afterwards. Control of warp and filling tension is usually left to the judgment of the operator or foreman in most plants, through lack of suitable tension meters. This may be satisfactory until a competitor offers a better return or more yardage on the same goods, after which microscopic examination of the competitor's sample usually discloses that greater tension had been applied. It is better practice to check the operation with microscopic examination periodically for maintenance of tension before rather than afterwards.

Some plants sour off the cloth after passing through wash boxes, but when unbleached cloth is mercerized, this is unnecessary as the weak caustic liquor can be left in for the kier boil. In those plants which sour off in the mercerizing wash boxes, a control of the sour flow is necessary since the acid strength would be entirely neutralized by the caustic if this flow was not sufficient, with a corresponding waste if too great. This can be easily checked periodically by a laboratory man.

When peroxide bleaching of colored yarn cloth is to follow mercerizing, partial souring is necessary to reduce to the free caustic introduced with the cloth. Laboratory control of this is essential to prevent trouble, and can be quite effective.

The introduction of recording instruments can relieve the laboratory of many routine analyses and secure the maximum of uniformity in operation. Recording thermometers as well as recording conductivity apparatus for caustic and sours are available and to go a step along the road of progress, we find in some plants the millennium of control in electrically operated valves on acid, caustic and water lines controlled by conductivity apparatus.

The laboratory has a useful sphere of operation in a bleachery starch room. Indicators may be furnished this department to guide the operators in selecting the proper speed for the cans, since the proper drying of the cloth is dependent on this factor. The laboratory furnishes special formulae and in some cases may make up special batches of finishing paste for experimental fabrics. In many cases, the laboratory supplements this with analysis of the finished cloth, especially when the specifications call for a cloth containing a definite weight of finish. Cloth damages, spots and stains also are brought to the attention of the laboratory as soon as noticed.

The laboratory should be in very close touch with the dye house for here it can be of great help. All new shades are submitted for matching and testing, after which a formula is furnished the dyer. The laboratory through its contacts is in a position to furnish the dyer with information on new colors, chemicals and improved methods. It is also of great help in the identification of spots, stains and resists.

In that dyeing intended for the rubberizing trade, the laboratory tests every color for control of the copper, manganese and iron content before the cloth leaves this department.

While it is not to be expected that the laboratory would have contact with the folding or packing room, it is in this department that some damages occurring in other departments show up. The laboratory work is simplified to either the identification of spots and stains or the analysis of finished cloth samples to meet special specifications. Some of the tests are—

a. Acid content.
b. Copper, manganese and iron content.
c. Weight of finish on cloth.
d. Weight of fabric.
e. Shrinkage in laundry.
f. Tensile strength.

One of the important duties of the laboratory is

(*Continued on page* 1324.)

Elimination *of* Night Work *for* Women *and* Minors Recommended

Hope of Many Leaders in Industry Nears Realization in the Unanimous Adoption of Resolution on Night Work

ELIMINATION OF NIGHT WORK for women and minors in cotton mills seems generally assured, following the adoption last month of a resolution on the subject by The Cotton-Textile Institute, recommending to the cotton textile mills, *"that they eliminate, as soon as possible, not later than March* 1, 1931, *the employment of women and the employment of minors under* 18 *years of age between the hours of* 9 *p. m. and* 6 *a. m."*

The executive committee of the Institute adopted the resolution at a meeting on September 11th, and, at a subsequent meeting of the board of directors of the Institute, the resolution was unanimously adopted. The statement of the Institute, concerning the resolution, said in part:

"The employment of women and minors at night was widely adopted in some sections of the industry during the World War to meet emergency demand. In recent years there has been a growing sentiment in opposition to the practice.

"At the last annual meeting of the Institute, in October, 1929, the subject came up for consideration and while many mill executives operating night shifts did not appear ready at that time to make such a far-reaching change, the desirability of doing so received considerable impetus from a conference of officers of the Institute and several prominent mill executives with Government officials in Washington, D. C., last January, and more recently from a meeting of the Cotton Manufacturers Association of South Carolina." The following members of the Institutue executive committee were present at the meeting when the resolution was adopted:

Walker D. Hines, chairman of the Board, and George A. Sloan, president of the Cotton-Textile Institute, Robert Amory, Boston, Mass., Harry L. Bailey, Boston, Mass., Bertram H. Borden, Fall River, Mass., Charles F. Broughton, New Bedford, Mass., Charles A. Cannon, Kannapolis, N. C., R. H. I. Goddard, Providence, R. I., B. B. Gossett, Charlotte, N C., George S. Harris, Atlanta, Ga., John A. Law, Spartanburg, S. C., Henry F. Lippitt, Providence, R. I., T. M. Marchant, Greenville, S. C., and Gerrish H. Milliken, of New York. G. O. Hunter of New York, a member of the selling agents advisory committee of the Institute, and Paul B. Halstead, secretary of the Institute, were also present.

The industry generally will welcome this expression on this vital subject, concerning which there has been much discussion during the past several years. The eventual adoption generally in the industry is conceded, and this, without question, will do much toward establishing the industry upon a more favorable plane, from the standpoint of public opinion. The recommendation from the industry's leaders, and its adoption generally, will unquestionably be the most outstanding humanitarian step taken by a major industry, and upon this basis, it is doubted whether more than a scattering of mills will fail to respond.

A more humanitarian attitude in the industry, an increased valuation of equipment, a better balance of productive capacity to demand, are considered among the main features to be achieved through this step.

Other Institute Activities.

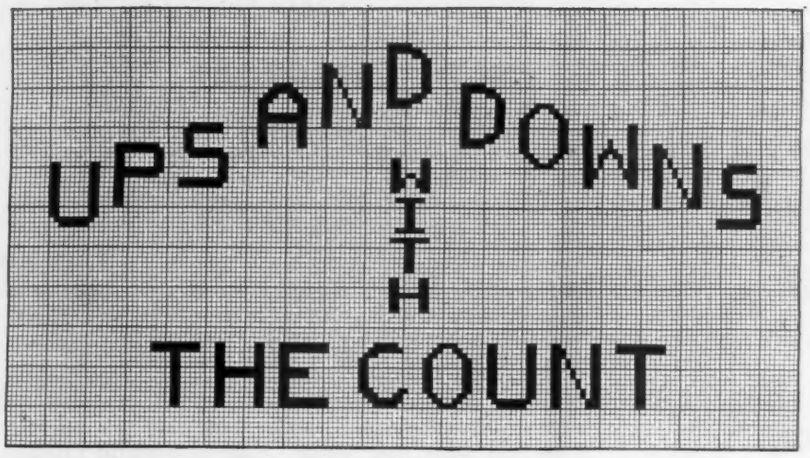
In addition to the foregoing recommendation—considered generally as the most progressive undertaking in the industry of the present generation—the Cotton-Textile Institute last month released other information of general interest.

On September 10th, the Institute filed with the Treasury Department in Washington a brief opposing standardized depreciation dates in computing Federal income taxes for cotton mills on the ground that they would be discriminatory and would increase taxes for more than 85 per cent of the mills in the industry.

On the same date, the Institute announced the formation of a General Arbitration Council to provide more comprehensive means for conciliation, mediation and arbitration in the cotton industry. An outline of an organization to be known as the General Arbitration Council of the Cotton Textile Industry was drawn up and was to be submitted to various organizations within the industry.

The position of the Institute with respect to consumer specifications for bed sheets was outlined on September 14th by George A. Sloan, president of the Institute, in a letter to Miss Alice L. Edwards, executive secretary of the American Home Economics Association. In his letter Mr. Sloan pointed out that the Institute advised the working committee in charge of this project that a majority of sheet manufacturers were not in favor of the proposed recommendations. He also recalled that "it has been impossible to find a single mill which believed that the present custom of marketing sheets under trade-mark brands would be improved by the addition of the figures suggested.

Sydney P. Munroe, manager of the cost section of the Institute, in August and September sent to all yarn mills and fine goods mills, constructive information concerning the relation of adequate costing methods in textile manufacturing.



Second of a Series of Articles on Textile Designing

FOLLOWING the introductory first article, the author here begins a discussion, in this series on designing, of paper, repeats, terminology, drawing-in drafts, chain plans, etc. The next article, to appear soon, will discuss classification of weaves, plain and twill weaves, and subsequent discussions will follow this plan by going further into the subject.

This series will appeal to you, whether you are experienced or inexperienced, because of the manner in which it is written, and the constructive discussions given.—THE EDITOR.

Textile Design Paper.

WHILE THE METHODS of making drawing-in drafts and chain plans differ considerably in different districts, there are fundamental means adopted by all designers to express their ideas. On any sort of designing paper a filled-square represents warp and an open square represents filling. A filled square means where a warp end and a filling pick cross that the warp end is raised so that the pick passes under it. This idea is first shown in the painted design. (A designer usually speaks of "painting" a design, whether he uses brush, pen, or pencil). Then the application is extended to include the drawing-in draft. In this case it means that each horizontal row of spaces represents a harness shaft. This harness shaft may be made of twine on wooden rods or it may be a wooden frame containing steel heddles. In either case, when an end is drawn through the eye in a heddle it is henceforth controlled by the shaft which contains that heddle; when the shaft is up all the ends on it are up, and vice versa. Each vertical row of spaces represents one warp end. Of course, every square space is on both a horizontal row and a vertical row. Each horizontal row of spaces represents a harness shaft, as stated above.

Remember that the *lines* are not significant, it is the *space between* the lines. Thus a filled square in a drawing-in draft means that the end (represented by the vertical row) is drawn through the eye of a heddle on the harness shaft (represented by the horizontal row) which it intersects at that point. In other words, the filled square is common to both the vertical row and the horizontal row.

While we are on the subject of shafts and drawing-in drafts let us say that harness shafts are numbered from the *front* of the loom toward the *back* and from the *bottom* of the draft toward the *top*. Some mills start at the left of the warp as the hand faces it to draw it in the harness shafts, and some mills start at the right and work toward the left. We have tried both ways and haven't any strong prejudice in the matter. Of course, if the hand draws from the left to right she must read her draft in the same direction.

When we get along to the chain plan or pegging plan or dobby chain plan, as it is variously called by various people, we get another slant on the significance of the filled square. (Don't read this too fast if you are new at the game, and if you are an old hand you might as well skip over it—we'll get to you later.) In a few minutes you youngsters are going to get a series of illustrations which should make these points clear. Now, about the filled squares on the chain plan. On the *chain plan* each vertical row of squares represents one harness shaft. Do you remember on the *drawing-in draft* that it was each *horizontal* row that represented a harness shaft? Well, the harness shafts on the chain plan are *always* numbered from left to right, just as on the drawing-in draft they are numbered from bottom to top and on the loom from front to back. On the chain plan, each *horizontal* row of squares represents one pick of filling, and the rows are numbered from top to bottom of the plan.

Then, how about a filled square on the chain plan, what does that mean? It means that the harness shaft on which it occurs is raised on the pick on which it occurs. Then, this means that every end drawn on the shaft or shafts that are raised on any pick are themselves raised so that the filling passes under those ends on the pick in question. It is by controlling the order of interlacing warp ends and filling picks that we are able to get the design in the cloth. Before we take up the physical construction and the mechanical operation of the dobby chain (which is a weaving problem more than a designing problem anyway) let us look at the illustrations showing the design, the drawing-in draft, and the chain plan.

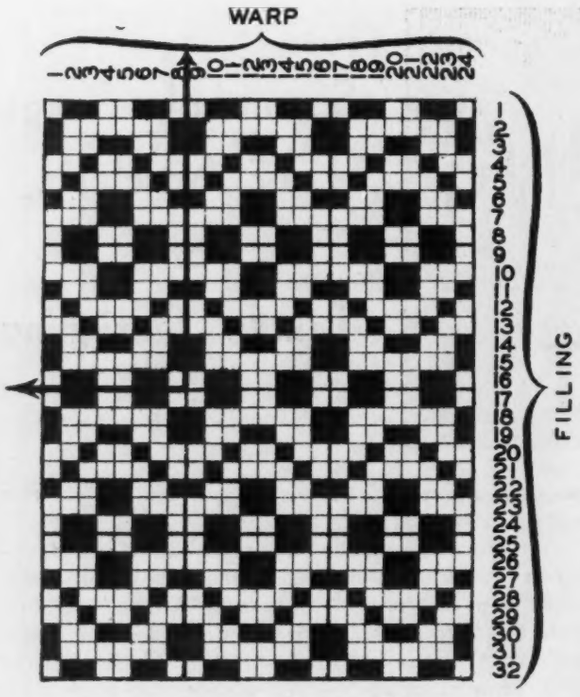


FIG. 1 – DESIGN
3 REPEATS OF WARP.
2 REPEATS OF FILLING.

The Repeat.

Fig. 1 shows the design for a weave such as might be used for a dobby shirting or for dress goods. This figure shows three repeats of the warp and two repeats of the filling. The heavy lines in the upper left-hand corner, setting off eight ends and sixteen picks, show one repeat of the pattern. Thus we say that the weave or pattern repeats on eight ends and sixteen picks.

Now what do we mean by "repeat"? Well, we say that a repeat of the weave is the smallest number of ends and picks which can be super-imposed on successive sections of the design or the cloth and which will then perfectly coincide with these other sections. Doubtless we can make this clearer by putting it in a little different way. A design is said to be a repeat when it contains all of the elements of the pattern in every order in which they occur.

Possibly we can clarify *that* statement a little. When a design has reached the point where the next end will weave exactly like the first end, and the end after that will weave exactly like the second end and so on, we say that the design is *one repeat*. In other words, at this point we begin to repeat in exact order what we have already done before.

This will be more easily seen by looking at Fig. 1. It will be seen that End No. 9 weaves exactly like End No. 1, End No. 10 exactly like End No. 2, and so on. Also, if we cut out the section consisting of the first eight ends and the first sixteen picks and put it on top of the adjoining section to the right or below, we find that the filled in squares come in exactly the same place. All that has been said about repeats of warp ends applies with equal force to filling picks, because we can't have a weave without both systems of threads, of course.

Terminology.

In a design, the filled-in squares are referred to as "raisers" or "risers" and the blank squares as "sinkers."

When reading a design to some one else, the "raisers" are referred to as being "up" and the "sinkers" as being "down". Thus we say that in Fig. 1 the first end weaves: 1 down, 2 up, 2 down, 1 up, 4 down, 1 up, 2 down, 2 up, 1 down. (This gives us one repeat). By the same token we say that the first pick weaves 1 down, 2 up, 2 down, 2 up, 1 down. (This gives one repeat.) Remember that the numbers across the top of the design refer to ends, and that the numbers down the right-hand side of the design refer to picks.

In this country we speak of warp and filling; in the British Isles the filling is called "weft" or sometimes "woof". We do not intend using these terms, but tell you this in case you read British articles and are puzzled about these terms.

Constructing the Drawing-in Draft.

Now to make the drawing-in draft, which is simply the sketch showing the drawing-in hands which harness each of the ends is drawn on. When we say that an end is *drawn on* a certain harness, we mean that it is drawn through the eye of a heddle which that harness shaft contains. Looking at a drawing-in draft is just like looking at a loom from above—it is like a bird's-eye view of the set of harness shafts. Just remember that the harness shafts are numbered from *front* to *back* of the loom, and that these shafts are designated, naturally enough, from *bottom* to *top* on the drawing-in draft.

Obviously, only the ends which weave *exactly* alike can be drawn on the same harness shaft. This means that for every end that weaves differently from the rest we must have a separate harness shaft. Please refer to Fig. 2, which shows the same design as in Fig. 1, with the addition of the drawing-in draft. The figures across the top of the design show the number of the ends. The figures across the *bottom* of the design show the number of the harness shaft on which each end is drawn.

This is the way we go about determining these numbers: starting at the left, we put the number "1" under the first end. Then under each successive end which does not weave exactly like any preceding end we put the next higher number. To illustrate, please refer to Fig. 2 again: First we put the number "1" under the first end, then we immediately see that the second end is up on this pick, so we put the number "2" under the second end. Then, looking at the third end, we see from the first pick that it does not weave like the first end. On the first, second and third picks it does weave like the second end. However, on the fourth pick the third end is up while the second end is down. Thus we see that we must put the number "3" under the third end. The fourth end is immediately seen to weave differently from the first three ends, so we put the number "4" under it. Now if we look at the fifth end and follow it all through one re-

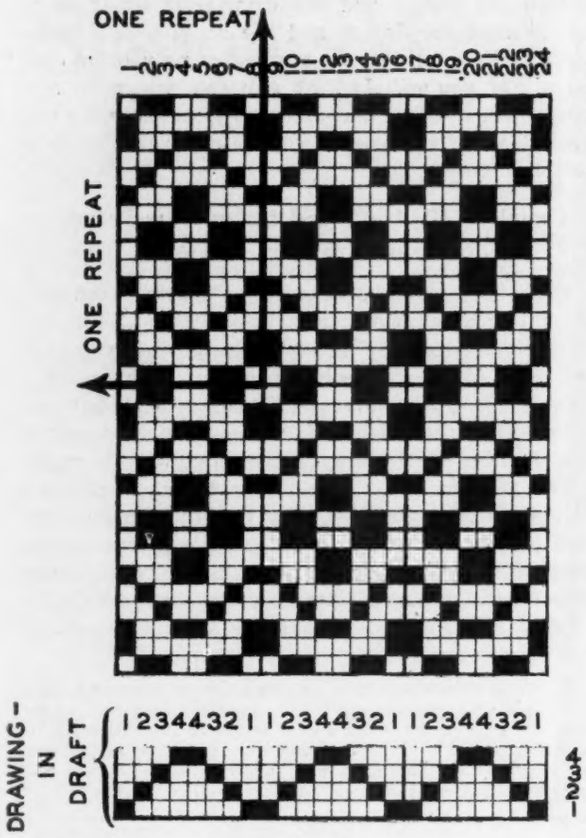


FIG. 2

DESIGN AND DRAWING-IN DRAFT

peat, we see that it weaves exactly like its neighbor, the fourth end. So we put the number "4" under it also. By the same procedure we find that the sixth end weaves like the third, the seventh end like the second, and the eighth end like the first. Consequently we put under them the same numbers as those found under the ends which they respectively weave like.

Thus we see that four harness shafts will be required to weave this design. Now if you will look a little further below the design, you will find the shafts numbered from bottom to top (front to back), on the right hand side. Since the first end is drawn on the first harness, we fill in the square where this end intersects the horizontal row of squares representing the first harness. This scheme is followed for all the other ends. It is seen immediately that we have three repeats of the drawing-in draft just as we have three repeats of the design. The number of repeats of the filling does not influence the size or nature of the drawing-in draft at all. In actual mill practice only one repeat of the draft is given, but we have shown three in an effort to make it clearer.

Let us call your attention to one thing again: viz., the ends must weave exactly alike, every pick for the whole repeat, if they are to be drawn on the same harness shaft.

Let us assume that we are using a black warp and white filling. Then the cloth will look exactly like the design. We have told you that the ends in the design are numbered from left to right and that the drawing-in hand may start either at the left-hand or the right-hand side of the warp. This means that if she draws from right to left she draws the number "1" end last. This will not cause any confusion, however, since she does not see the design and does not know or care how the ends are numbered.

In the case of a fancy weave like the one shown here, it is necessary to draw the selvages on separate harness; but we will disregard this for the time being, as we intend giving special attention to this later.

Concerning the Chain Plan.

All right, let's say the warp is already drawn in. Now to work on the chain plan.

You will remember that the bottom row of squares in the drawing-in draft shows the first harness, and that the harnesses are numbered from front to back on the loom and from bottom to top in the drawing-in draft. In the chain plan, the harnesses are numbered from left to right. The term "chain plan" simply means the plan by which the dobby chain is pegged. It is also called "pegging plan" and "chain draft". Remember that in the chain plan a filled-in square means that the harness in question is raised on that pick. This is accomplished on dobbies by means of a small metal peg or plug which is screwed into the dobby chain bar in the hole belonging to the harness in question. So we may also say that the filled-in square represents a peg, and the empty square a peg out. Consequently, in calling off a chain plan to another man we often say "1 out, 2 in, 2 out, 1 in, 4 out, 1 in, 2 out, 2 in, 1 out" instead of "1 down, 2 up, 2 down, 1 up, 4

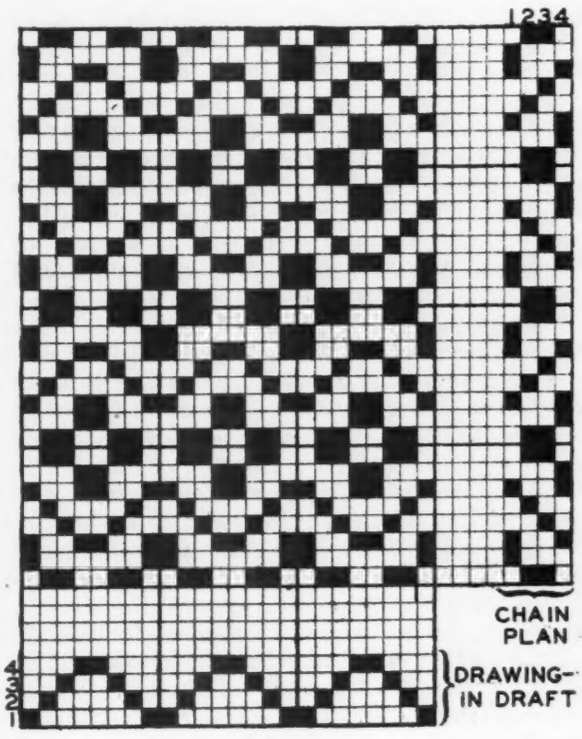


FIG. 3

DESIGN
DRAWING-IN DRAFT
CHAIN PLAN

down, 1 up, 2 down, 2 up, 1 down." They both mean exactly the same thing.

Making the Chain Plan from Design and Drawing-in Draft.

Now to actually construct the chain plan. You will see of course that any and all ends which are drawn on a given harness shaft will, of necessity, weave exactly like that shaft. Consequently, in making our chain plan, we select any end which is drawn on the first harness and indicate on our chain plan that the harness itself weaves exactly the same way. In other words, where we have a raiser of the ends on the first harness in the design, we show a peg *in* on the same harness and same pick in the chain plan. In order to find which ends are drawn on a given harness, it is necessary simply to look at the drawing-in draft.

Fig. 3 is merely the further development of Figs. 1 and 2. The addition of the chain plan in Fig. 3 is the only difference. Reference to Fig. 3 will show the harness shafts in the drawing-in draft numbered just as they were in Fig. 2. To avoid confusion, the ends and picks in the design are not numbered in Fig. 3. However, if you care to refer to Fig. 1 you can see this designation. The chain plan is shown to the right of the design in Fig. 3. From the numbers above the chain plan it will be seen that the harness shafts are numbered from left to right. At this point, let us say that there is no significance to the space left between the design and the drawing-in draft or to that between the design and the chain plan. These spaces are left for the sole purpose of preventing confusion. If you will look at any end drawn on any harness you will find that on every pick where the end is raised there is a peg in the chain for that harness shaft on the same pick.

Complete All Drafts and Instructions Before Releasing Any Part of Them.

It is best to make drawing-in drafts, warp lay-outs, filling arrangements, chain plans, and any other instructions necessary all at the same time and then send them to the overseers concerned. The drawing-in draft goes to the overseer in charge of this work. He is either the slasher or weave-room boss or the designer himself. The warp lay-outs go to the warper and slasher boss. The filling arrangements and chain plans go to the boss weaver. This expedites the work of getting out the order, since all departments are working at the same time and are all ready when the job gets to them. For example, the weave room will have the dobby chain and the box chain built by the time the drawn warp reaches there.

[Having thus taken you through the elementary points, the author will now begin a more advanced discussion of the subject. This is the second of a series of eight articles on designing. The third article will appear in an early issue, and will discuss classification of weaves, plain weave, twill weaves—common, fancy and novelty.—The Editor.]

Functions of a Laboratory.

(*Continued from Page* 1319.)

the control of supplies which, from their nature, can be tested chemically. First of these in importance, the process water of a bleachery should receive most careful attention. The water systems of most finishing plants have been designed by experts in the field of water correction. These systems function well under the conditions of installation, but to obtain all the advantages, laboratory control is essential. The laboratory is naturally in the best position to make the routine tests, maintain the records, and in the advent of unusual changes in the water, to correct the chemical dosage.

The plant chemist is in the best position to interview salesmen and should be able to meet these people in an office where all oral information can be written down and filed. Such an arrangement ordinarily saves needlessly calling process overseers from their work at inopportune times. It also prevents salesmen wandering through the plant and wasting the time of several overseers in many cases for occasionally garrulous salesmen fail to recognize that the overseer's time is valuable to the bleachery and is needed. It also prevents these people from wandering through the plant and making social calls for many salesmen never seem to recognize when they are wasting the overseer's time and distracting his attention from the process.

When a new or competitive product is offered, the laboratory should request a sample for analysis with a letter for its files showing price, quality, conditions of sales, as well as the recommended method of application when necessary. Then, if the analysis shows the product to have a favorable money value, the laboratory should supervise small plant trials after which it should notify the purchasing department with its recommendations.

All materials purchased regularly should be sampled and tested for quality, preferably before use.

The experimental technical development would naturally be in the province of the laboratory operations. New processes must first be experimented with in the laboratory, then when the results seem promising, overseers must be informed of the theory and instructed in the use of any special indicators furnished. The laboratory co-operates again by analyzing samples and taking any necessary data.

The management and sales force look to the laboratory for technical advice and data. Information is obtained here for arbitrating any damage claims. This is rather an important connection for many times a converter sends the same kind of fabric to different finishing plants, and after distribution, loses this record. Then if a complaint comes to him, the finishing plants will, undoubtedly, be faced with a claim that can only be offset by a comparative analysis showing that this particular cloth had not been finished in this plant. Unjustified claims, moreover, frequently reach finishing plants and then must be met in a manner to convince the claimant of the injustice of his position. Reports of laboratory investigation will usually serve in most cases.

Slashing-Weaving *and* Mechanical Discussion *at* Georgia Meeting

Another interesting meeting is held by the Georgia mill men. The boiling of size, weight of squeeze rollers, use of slasher control equipment, moisture content and other subjects discussed at morning session.

An innovation in the program in the form of a discussion on mechanical subjects, well attended and productive of interesting information. Frank K. Petrea is elected general chairman; and E. H. Rogers vice general chairman.

A COMPREHENSIVE LIST of subjects pertaining to slashing and weaving practices and problems, and a number of important topics pertaining to the work of the mechanical department of the mill, were discussed at the annual meeting of the Textile Operating Executives of Georgia, held at Georgia Tech, in Atlanta, Ga., on Friday, September 19th. A complete report of these discussions will be found in the following paragraphs.

The annual election of officers was held at this meeting. Frank K. Petrea, superintendent of the Swift Mfg. Co., Columbus, Ga., was made general chairman, succeeding Frank E. Heymer, superintendent, Piedmont Cotton Mills, Egan, Ga. E. H. Rogers, agent, Fulton Bag & Cotton Mills, Atlanta, was made vice general chairman succeeding Mr. Petrea. Three members were elected to the executive committee; A. E. Massey, general superintendent, Thomaston (Ga.) Cotton Mills, for a full term of 2½ years succeeding W. R. Holt; D. D. Towers, superintendent, Anchor Duck Mills, Rome, to fill the unexpired term of E. H. Rogers; and George W. Murphy, superintendent, Columbus Mfg, Co., to succeed Walter B. Dillard, Jr., who resigned on account of leaving the state. Robert W. Philip was re-elected secretary-treasurer.

The meeting was a one-day affair, slashing and weaving being discussed at the morning session. The meeting was opened by General Chairman Heymer, who called upon George S. Elliott, superintendent, Pacolet Mfg. Co., New Holland, Ga., to lead the discussion on slashing. The first question presented by Mr. Elliott was: "Should size be boiled? What are the results in cooking size—if you cook one hour, then two hours, then three hours, at which point are the best results secured? How long can it be cooked before deterioration sets in and the value as a softener is lost?"

Time of Cooking Size.

John H. Howarth, assistant superintendent, Lanett Mill, was the first to respond. Speaking of corn starch, Mr. Howarth said he did not think there was any doubt but that size should be boiled in some manner. He reported tests of cooking size for 15-minute intervals from 15 minutes to 2½ hours, stating that at 15 minutes the starch wasn't broken at all; at 30 minutes it was beginning to break; at 45 minutes it was almost broken up; and at 1 hour it was in good condition to put on the yarn. From 1¾ hours up to 2½ hours, he said, it began to thicken up so that it was like corn-starch pudding, and that this consistency would undoubtedly give trouble in the pipes, so he did not go further with the time of cooking. He said they had concluded that between 1 hour and 1½ hours gave them the best results.

As to potato starch, while he does not run this now, Mr. Howarth said he had found that the longer this is cooked, the thinner it gets, and for this reason he did not believe it a good idea to attempt to mix the two kinds of starch, at least not on his 17s warp.

Mr. Howarth replied to the last part of the question by stating he does not believe the value of the size as a softener is ever lost unless it sours. He added that he had run some tests on size cooked for two hours, and found that he got hard size spots, about the size of a dime, on the yarn.

"After it boils for two hours, and gets a great deal thicker, do you get the same penetration?" asked Mr. Heymer.

"I do not think so," said Mr. Howarth. "After I had run it a little while and thinned it down in the size box and put in water, that weakened it and I had more scale on the yarn; it was a lot rougher. I might have thickened that up by putting in more tallow, but I did not go that far with it."

"But your experience is that the thinner it is the more penetration you get?" continued Mr. Heymer.

Here Mr. Howarth expressed the opinion that "I believe this penetration is the bunk," because, he said, if there is as much size put inside as outside, it would be "just like spaghetti," and very breakable. He said, "you don't want anything you can break; you want elasticity." He explained his conception of raw cotton as having the fibers standing apart, and that his idea of the proper sizing was to lay these fibers down as one unit rather than fill the spaces between them with size.

"In making these experiments, did you observe where you had the most shedding?" asked Mr. Heymer.

"I do not know very much about shedding," said Mr. Howarth, "as we have but little if any, but a few years ago on returning after a short absence I noticed some parts of the weave room looked like a flour mill, and on checking up we found that starch had been added but no compound, causing the shedding. This we quickly remedied and there was no more

shedding. I say this to show that the easiest way to get shedding is too much starch or too little compound. What causes shedding mostly is the starch not being fixed on the yarn and it sheds from the chafing of the harness and reed and stop motion wires.

"I would like to add that the excessive shedding I spoke of did not happen under our present overseer."

"Do you boil with a closed coil or an open coil?" asked Mr. Elliott.

"We boil with an open coil, and the storage kettle has a closed coil," answered Mr. Howarth. He explained that they do not put in a certain amount of water; but that they put the size in the kettle and boil it and then put in hot water up to a level. Mr. Elliott mentioned that possibly the open coil would thin out the mix, and Mr. Howarth said,

"I see what you are driving at. The water from the open coil would reduce the starch. I will answer that by telling you of a little incident of a man who had convinced my boss that a closed coil in the size box was a good thing. He had me about convinced, too. He asked me how much water I thought was going into the size box in an hour, from the open coil, and I told him I didn't know. He asked me if I thought it was a pint, or a quart, and showed me that if it was a quart, then in ten hours I was putting in ten quarts of water, which would thin down the size. Then it occurred to me to ask him how much he thought I was evaporating in the size box in an hour, and he said he didn't know. I asked him if he thought it was a pint or a quart. I believe the evaporation takes care of the water that is added from the open coil."

V. J. Thompson, superintendent, Manchester Cotton Mills, was next called upon. He said he boils for 1 hour and 15 minutes; that as much as two hours caused too much shedding to suit him. He said he carries 212 degrees temperature in the storage and cooking kettles. Mr. Elliott brought out that the size actually boils at about 208½ degrees, and that to carry it above this in the storage kettle is maintaining it at a boil. Mr. Thompson said this gives him no trouble, but that he does have difficulty with having to blow the pipes out. Mr. Howarth said he keeps his at about 198 to 202 degrees in the storage kettle. As to the size baking around the coils, Mr. Elliott pointed out that this will result if the coils are too close together, and that if they are moved further apart, this will permit of more agitation between them.

Re-Leading Rolls on Slashers.

Frank K. Petrea next reported. He stated that they use thin boiling starch, with open coils, and boil the size for a period of time, then cut it down to just cooking. They do not have temperature controls on the kettle. "We cook our size for about 1 to 1½ hours, finding that to give best results. Above 1½ hours we find does not suit our work." Mr. Petrea said they have no storage kettle, circulating the size back to the cooking kettle; having several kettles, so that one may be used while cooking in another.

"How often should rollers be leaded? What length of blanket do you use? What effect does the use of a longer blanket have on the yarns being sized? What effect does a shorter blanket have?" This was the next question, and Mr. Willingham of Fulton Bag and Cotton Mills reported first. He said that he believes that at least once a year the duck or cloth on the roll becomes cooked, and the rolls should be re-leaded. He inspects about every two weeks, being guided by the condition of the cloth, and the presence of rust spots, in re-leading. He uses 5-yard blankets, using three yards of new blanket, and two yards of the old one on the outside to keep it from being so soft. He said he had tried shorter and longer blankets; that the shorter one had a tendency to get hard and mash the yarn, while too much of a cushion leaves the yarn so wet it will not dry properly, giving too heavy a sizing.

FRANK K. PETREA, who led the weaving discussion, and who was elected as general chairman. He is superintendent of the Swift Mfg. Co., Columbus, Ga.

Frank L. Asbury, Jr., superintendent, Hillside Cotton Mills, LaGrange, was called upon, reporting that they run so many different weights that they have to use a blanket that will serve all purposes. He uses 3½ yards of an 18-ounce blanket. He said, "I imagine a long blanket would give too much cushion." Mr. Elliott asked, "If you use 3½ yards of an 18-ounce blanket, have you ever tried, say, 4 yards of a 14-ounce?" No one reported a test of this kind.

Mr. Moore, of Eagle & Phenix Mills, Columbus, said he gets best results from a 3½-yard blanket; that a longer one permits the size to cake on the yarn; "and in addition it is harder to hold your moisture in the yarn. You get too much moisture."

"We lead about every six months," said C. K. Cobb, assistant superintendent, Canton Cotton Mills. "If we go over that they rust. We have an extra set of rolls to put in while we are releading. We use a 16-ounce blanket, 13 feet and 4 inches long. We find if we use a longer blanket that it gives too much cushion and lets too much size go through, and if we use a shorter one it squeezes too much out." A heavier blanket makes a park at the end of the cloth, he said, and since they use caustic this would eat the wool out in just a few days.

Weights of Squeeze Rolls on Slashers.

"Have you experimented with changing the weight of the squeeze rollers on size boxes? If so, what were the results? What weight are you using?" This was the next question.

"We have a 550-pound on the front, and a 350-pound at the back," reported Mr. Asbury. "Up to

three or four years ago we had two 350-pound rolls, and we made an experiment with a heavier roll on the front. It made a difference in the percentage of size. It made the size stay on better by forcing it in, and it did not shed as much."

Clifford Barnes, overseer of weaving, Exposition Cotton Mills, said "we had two 350-pound rolls and changed to 590-pound, and we found we had less shedding. We can dry with less steam and get a smoother warp."

Mr. Heymer reported changing from 350 to 450 pounds, at a previous position, and getting better pentration by forcing the size into the yarn more. He said there was about 1½ to 2 per cent increase in the sizing.

D. S. Cook, agent, Pepperell Mfg. Co., Opelika, Ala., asked if anyone had experience in being able to make the top squeeze roll center directly over the bottom squeeze roll, when the bearings get worn and the rolls get off-center. Mr. Elliott said this suggested a good point, stating that the further off center you get, "the more chance you have for size rolling on the bottom roll and coming in contact with the yarn twice. I never have run into it, but there are some mills that have put ¼-inch or 1/8-inch blocks in the stands back of the rolls in order to throw them more on the center, instead of putting in new gudgeons."

FRANK E. HEYMER, superintendent, Piedmont Cotton Mills, Egan, Ga., retiring general chairman of the Textile Operating Executives of Georgia.

Mr. Cook stated that he had increased the weight of the front roll from 250 to 450 pounds, putting an arm and fulcrum on the back roll, and secured better results by 2 per cent more size.

Use of Controls in Cooking Size.

"What benefits have you found in the use of controls on slashers? From your experience, would you recommend a full system of controls, or a more limited use than a complete installation calls for?" This was the subject of the next discussion.

Mr. Barnes of Exposition, said they had tried one set of controls on the cylinders on one slasher, but reported difficulty with getting the cylinders heated quickly enough after a shut-off. He concluded that would be dangerous and did away with the controls.

"We have a complete set of controls," said V. J. Thompson, of Manchester, "and we find that we get perfect results, running different numbers of yarn." He stated that in changing from one number of yarn, or number of ends, to another, they change the speed of the machines, and have no trouble from this. "How often do they cut off?" asked Mr. Barnes. "Regularly," said Mr. Thompson, "but the controls will not vary over two or three degrees."

Mr. Elliott asked as to the moisture content before and after using the controls. Before using the controls, Mr. Thompson said, the variation in moisture content was between four and five per cent, and that now it runs a great deal closer, although it does vary some, from one to two per cent.

In connection with moisture content, Mr. Howarth made the point that it is a questionable subject. That if a warp is made with, say, 7 per cent moisture and is stored in a room or taken into a weave room with a different moisture content, the warp will very largely assume the moisture content of the room in which it is placed.

"We have controls on all of our size boxes and kettles," Mr. Howarth said, "and we have some on the cylinders. It makes a difference as to whether you are running 2,400 or 6,000 ends." Mr. Pruitt, the overseer of weaving at Lanett, explained that they run all of their 5,000-end warps on the same slashers, with cylinder controls, and find the controls to be pretty accurate. He said they have fourteen slashers, which enables him to do this.

V. J. Thompson said his ends range from 2,300 to 5,000, and that they run these on the same slashers, by varying the speed, trying to leave the temperature the same.

"The benefits of controls are numerous," said D. D. McAlister, overseer of weaving, Chicopee Mfg. Corp., Gainesville, "but the chief benefit is that we have some way of determining how much steam we have, and the temperature of the slashers; also we know exactly at what temperature each kettle was made and how long it was cooked. Each morning I can tell how long each kettle was cooked at night, and the same thing is true on the size boxes. I think it is important that we know how hot our size is. The controls do not help us to get that heat, but they show us when we have it.

"We have full controls from the cooking kettle to the size box, and they have been very successful. We do not have any trouble in keeping them regulated. The lines on the chart run almost in a straight line. A record is made from the cooking kettles, storage kettle, cylinder and size boxes. We run nothing below 40s, and we have from 640 to 7,200 ends in the warp, and we have found the controls equally successful on all kinds of warp. If we run 700 or 800 ends we do not use nearly as much steam on the cylinders as if we were running 3,500 or 4,000 ends; we have to put a great deal more steam on with the higher number of ends, but we do not have any trouble keeping the record on the dial in almost a straight line. Downstairs I have a dial on a kettle where the vibration of the mill shakes it, but it is not due to the steam pressure." Mr. McAlister said he runs from 22 to 60 yards a minute on his slashers, but that he varies his steam pressure for different conditions. Mr. Elliott pointed out that "most of us try to maintain constant temperature and vary the speed where there is no excessive difference." In

answer to a question Mr. McAlister said that both of his cylinders are on the same control. He expressed the opinion that "moisture content," like Mr. Howarth's "penetration," is a "figment of the imagination," because of the effect of room humidity on the warp. Mr. Elliott asked him how much of a working range he used, and Mr. McAlister said, "I have never scorched a set and never had mildew." Mr. Elliott said, "if you have pretty close to around four per cent moisture when it leaves the slasher, there is a certain amount of browning that takes place. I don't know whether it is fiber or starch, but I have found that between four and eight per cent is a good working range. Ours runs between 5½ and 8¾ per cent. I have heard people say they could hold it to within one-half of one per cent, but I had my own opinion as to whether they were conscientious or not, or whether they were kidding themselves as well as trying to kid me."

C. K. Cobb, of Canton, when called upon, stated they do not use controls. He said it depended, in his opinion, on the temperature desired, and whether a mill has operatives capable of looking after the temperature. He said he had tried controls on size boxes, but had taken them off, because he keeps the size in the box boiling, and to do that a maximum temperature is necessary. In response to questions, he said that he does have occasional trouble with it boiling over, but that he had this also while using the controls. He said further that, with the controls, when electrical disturbances would shut the power off, the size would overflow the box, due to the valve not working. Mr. Howarth asked if he did not find that once in a great while the size splashes up on the yarn after it has gone through the squeeze rolls. Mr. Cobb said he has less of this without the controls. He said he uses a hand thermometer frequently to check the temperature. Mr. Thompson and Mr. Pruitt said that their valves operate so that in the event of a power cut-off, the valves close. Mr. Elliott explained that it is possible to get reverse acting as well as direct acting valves for this use.

"We have temperature controls on the cooking kettles and size boxes," said Mr. Moore of Columbus. "If you are going to get uniform sizing it is essential that you have these controls. I am so sold on them that I believe they are just as important for uniform sizing as steam gauges or water gauges are for a boiler."

"I agree with you," said Mr. Elliott. "If there is anything to uniform sizing you must keep the elements uniform."

Mr. Howarth pointed out that a big advantage in the recording controls was that it furnishes the man in the office with a picture of what is going on, and suggested that one way of testing their value was to leave them off some time and depend on the man at the slashers, regardless of how careful he might be, and then watch the charts.

Frank Cooper, of Fulton Bag & Cotton Mills, asked what the benefits are from the standpoint of the weave room. "How much do they cut loom stoppage down?" he asked, pointing out that any ultimate benefit from slasher controls should be in the weave room.

Benefits in Weave Room.

"Here is the best answer I can give to that," said Mr. Elliott. "We made four or five hundred different tests for regain without the controls and with them, and we find that our percentage of regain is much more uniform. If your regain is of any value it should react directly in the weave room. How much difference there is in the stoppage I cannot tell you, but we do know that our sizing is much more uniform."

"I find that the break of the yarn is stronger," said Mr. Howarth, "taking single thread breaks right off of the slasher. It is 5 to 7 per cent stronger, and more uniform." Mr. McAlister reported an experience indicating that the installation of slasher controls had contributed to a reduction in end breakage on the loom. He added, however, that it is very important to have somebody who can run the equipment. Mr. Elliott said he has no trouble in keeping the controls adjusted.

GEORGE S. ELLIOTT, superintendent of the Pacolet Mfg. Co. No. 4, at New Holland, Ga., who conducted the slashing discussion at the morning session.

"If a man did not want to put in a complete installation, which part of the installation would you recommend?" asked Mr. Petrea. Mr. McAlister said if he had to choose, he would take them on size boxes and kettles, but that he would hate to have to choose. Mr. Asbury said their equipment is on kettles and size boxes. Mr. Thompson remarked that he would do without something else in order to have the complete set. "I would hate to do without any of them," said Mr. Elliott.

More than One Lease Rod to Beam.

The next question was, "Do you run one lease rod between the various beams in the slasher creel, or do you use more? If more, describe use and benefits."

Mr. Rogers, who had proposed the question, explained that he had not used extra lease rods in some time, but that he is not convinced that it is not a very good thing for getting a better separation of the yarn, especially since the tendency toward taking tension off of the slasher creels gives the yarn a tendency to crawl. No one present was able to report experience with this method. Mr. Elliott suggested that "the more lease rods you have the greater chance there is for popping ends, and one of these points might offset the other."

The chairman next asked, "What percentage of

moisture content do you find best in sized yarn for best results in weaving? In what manner do you test it, and how often?"

Best Percentage of Moisture Content.

Frank H. Cooper, of Fulton Bag, reported a test of four slashers, running the yarn through, taking it right off to the laboratory. He got an average of 11 per cent moisture, but said he does not have any trouble with mildew. This was on 48 sley goods, and he said they run the slashers rather fast. He explained, however, that a mill would hardly carry in the slasher room a humidity sufficient to maintain this 11 per cent moisture, so that undoubtedly a part of it is subsequently lost. Mr. Elliott explained that the amount of "breathing space" the yarn has on the beam had something to do with the possible danger of mildew.

George W. Murphy, superintendent, Columbus Mfg. Co., reported that they have a moisture content of 5 2/3 per cent from the slasher; after the cloth comes off the loom it carries about 7½ per cent. C. K. Cobb said his warp leaves the slasher with about 6 per cent. D. S. Cook reported that since installing slasher controls, they have about 6 to 7 per cent from the slasher; that previously it was impossible to determine what it was accurately.

Slack Selvages on Slashers.

"Have you had difficulty with slack selvages on slashers? What have you done to correct this trouble?" This was next submitted for discussion.

"We had that trouble on one slasher," said Mr. Cooper of Fulton Bag. "We found this slasher out of line, and so we took a regular surveyor's transient, and got back as far as we could, and lined up the journals, front and back and on the head. After we did that we did not have any more trouble." He said the trouble appeared as tight sides on the beam.

"We had some trouble on wide sheeting," reported Cliff Barnes. "We thought it was a loom trouble, and worried around with that and finally decided that it was further back. We lined up the size boxes on the slashers, but we finally found that the slasher man, when putting a cushion on the measuring roll, had put more cloth on one side than the other."

"We lined up our slashers," said Mr. Howarth, "but finally decided one of our troubles was that our warper beams were worn on the edge so that there was a space between the head of the beam and the warper drum, and it was piling up. Then, naturally, when the weaver got it he had slack threads. We put in high speed warpers, using nothing but wooden heads, and we found a few of these heads had warped, which piled the yarn on one side. We took them out and fixed them up. When we had the iron heads they would wabble, and sometimes they would vary as much as a ¼-inch between the heads."

Amount of Stretch on Slashers.

The chairman next called upon those who had been asked to determine the amount of stretch they get on slashers. Frank Asbury reported 1½ per cent stretch on 11½s yarn; he explained that they use a tension device on their slasher creels with which the individual beams are brought up separately, not running over and under. This is a positive-driven slasher. Frank Cooper reported a test on 7½s yarn, 1,224 ends, on a three-cylinder slasher, yarn driven, ball-bearing. Three tests on 10,000 yards gave him an average of 1.246 per cent stretch. On a two-cylinder, positive-driven machine on 20s, he found .37 per cent. Mr. Moore of Columbus reported, on yarn-driven slashers, 2.22 and 1.16 per cent on 22s. Mr. Howarth said his averages about 2.60 per cent; Mr. Elliott reported an average of 1.62 per cent, with the smallest as 1.02 and the greatest as 1.85 per cent. He told of a conversation with Mr. Rogers on this point, and asked Mr. Rogers to repeat what he had told him.

"In measuring your beams," Mr. Rogers replied, "you said you put your measuring device on the loom beam. I doubted the accuracy of that because one beam might be tight and another slack, and the slack one would allow the instrument to be buried, so to speak, and give an inaccurate reading." He explained that his method was to change the gears driving the cylinder or squeeze roll, and when a mark on the cylinder and on the yarn practically correspond, that is the place to stop.

Methods of Loom Inspection.

This concluded the slashing discussion, and Frank K. Petrea was called upon to lead a brief discussion on weaving. This first question was: "What is a correct method of loom inspection? By whom, how often, and method of checking?"

Mr. Cobb said that their loom fixers check over the looms every two weeks; and every morning the section men go over them; and then the head loom fixer checks them.

Mr. Pruitt said that every week he decides what parts of the looms are to be checked, and gives a written order to the second hand, who in turn gives an order to the loom fixers, who make the inspections and the necessary repairs, and when this has been done, the filled order is returned to the overseer. Each week, he said, he selects some particular part or parts of the looms for inspection, keeping this up until they cover the entire loom. Sometimes, he said, some parts take more time than others. He said they cover shuttles and filling feelers and shuttle feelers all together, for example, as well as the pickers. The second hand examines every shuttle that goes in and comes out. Mr. Pruitt also said that they put in new pickers every time they put in a new shuttle.

"We have the looms inspected every day by two girls who go around with flash-lights," said Mr. Elliott, "looking for imperfections. Then the second hands and fixers are constantly going over them from tickets returned from the cloth room as a result of imperfections. As long as a loom is making perfect cloth, we feel that it is all right."

"Our looms are inspected every day by the second hand, and once a week by the overseer. The fix-

ers and smash hands are also trained to inspect their sections; they are paid by the pick, and also in accordance with the amount of seconds they produce."

Mr. Berry of Columbus, an overseer, stated that he is constantly going through the room, and as he finds something that needs attention, he has the repair made. He stated that they are on coarse goods, and the warps run out every two weeks or so, and he is insistent upon a very close inspection every time the warp is out, because so many of the loom parts are exposed at this time. Mr. Petrea stated that, "our warps run out about every two weeks, and we do the same thing, making a general inspection of the loom."

Causes of Loom Stoppages.

Mr. Petrea next asked, "What percentage of loom stops are due to poor preparation? What are some of the causes? It was explained that this was intended to divide loom stop causes into those resulting from causes ahead of the loom, and those coming from mechanical causes on the loom itself. Mr. Howarth said he had not made a definite test on this, but felt that a good percentage of the stops were caused from poor preparation at the slasher. However, he said, it is possible for a weaver to take a poorly prepared yarn and improve its running qualities by correct slashing. "If a warp is slashed well, you can weave it well. If a loom is set right, and the warp is properly prepared, there is nothing that should break it in an ordinary weave," he said. "Sometimes a hard weave will chafe the yarn. Sometimes the whip roll is so high that the shed is so tight it will snap the thread."

Mr. Cooper said that to answer this he had run a series of tests, and determined that 81 per cent of all loom stops were caused by poor preparation, or something back of the loom, and 19 per cent from mechanical trouble on the loom. "In making these tests," he said, "we would find a loom with an excessive amount of stops from weak yarn, but by setting the whip roll or the harness we found we could cut these stops down. We have a man who makes these inspections and a fixer along with him to fix them." In answer to a question, Mr. Cooper said these were nine-hour tests, but that he found more breakage in the mornings than in the afternoons. He also reported that he found a loom with excessive stops, but could locate nothing wrong, until he noticed a nail in the race-plate which had worked loose and was causing many of the stops.

Drawing in Plain Selvages on Broadcloth.

"How should selvages on plain broadcloth be drawn?" was next asked. One man recommended a single end through the eye, two ends through the dent. Another said that in securing a good smooth selvage on this goods, he had found that three inches of sand paper on each edge of the perforated steel roll was of assistance.

There was a brief discussion next as to the best method for keeping loose ends in the warp. Mr. Heymer said that it was best not to have them, and suggested a daily check-up by the warper hands of the drop wires and rocker shafts, as well as the number of ends. Assuming it necessary to have them, one man suggested putting them in the selvage, another winding them around the beam.

Pick Counters on Single-Shift.

Mr. Petrea next asked, "What benefit, if any, are pick counters on a regular day run, in determining loom production?" The report of Mr. Asbury stated that, "pick counters enable you to ascertain production for any period of time, whereas the cut, yard or pound method is only approximate, unless the looms are doffed regularly at a certain time."

Mr. Barnes of Exposition stated that, "We like them because we have found, after leaving the cut method and going to the counter, that it increases our production a little bit; and because the weavers can look and see what they have done. Then if you are on a long length, the weavers can get their pay every week." In response to a question from Mr. Petrea, Mr. Barnes said his counters are not equipped with a chart to show what the expected reading is on each loom.

"We find that counters are an inspiration to the weavers to do better and more by knowing constantly what they are doing," said Mr. Elliott. "The overseer can detect any looms that have been stopped. Frequently a loss in production is due to a belt slipping, and this can be detected. Then the weavers get constant and regular wages. It puts the overseer in a position where he can watch each individual loom each day. Then, too, we now check our production in the weave room with the cloth room." Asked as to how much the counters increased his production, he said he could not say definitely, but would estimate the increase at two to four per cent.

"Another thing," Mr. Barnes added, "if a weaver is absent, whoever runs his job gets paid for just what he does. There is no guess work about it."

"It is by far the fairest system that has been developed for paying weavers, and section men and fixers, for that matter," declared Mr. Elliott. He said he has his counters read daily, and checked weekly by another man.

Mr. McAlister of Chicopee said they are fully equipped with counters, and that he likes the pick counters in his department; he said he could determine in two hours the week's production and percentage, whereas this required much more time under the old method. This concluded the morning meeting, and a "Dutch" luncheon was served in the school dining hall. The executive committeemen, as reported previously in this story, were elected at this time.

Mechanical Discussion.

THE AFTERNOON SESSION was devoted to discussion of a list of subjects pertaining to the work of the mechanical department of the mill, and was designed chiefly as of interest to master mechanics and

(*Continued on page* 1373.)

CURRENT TOPICS

Talk of the Month

IF WE READ the signs of the times aright, the textile industries of the country will emerge from the current depression of business in a relatively better position than they have occupied in the general economic world for many years. In fact in this oldest of industries of the machine era, we find developments which indicate a possible, nay, probable establishment of a new normal relationship with the rest of the business world. Altogether the industries of the land appear to have come to an impasse of common problems and textiles no worse than others, after a sadder experience for the latter which may be traced in part at least to their greater age.

It is an old yet pertinent story that textiles faced a double, or triple, disadvantage after the early post-war inflation. There was the over-capacity, the aggravating style changes and the new competition of industries previously non-existent or of comparatively recent birth. The past ten years have been productive of new advances in methods by all industries which have quickened and multiplied the output per individual, until the question of how machinery operation might be properly controlled finally has beset the whole country.

Whether the five-day week will be the logical outcome of the common industrial problem, however, has not been the basic question for cotton manufacturers. For this great industry has not seen fit, until lately, to adjust itself to a reasonable five-and-a-half-day week except in States where such a program is practically enforced by legislation. In another month or so, it is likely that the night work in a large number of mills will have been eliminated. Thus it looks as though the cotton industry is to put itself on a new footing which will bespeak a permanently better situation.

Production and Distribution

DESPITE AGE-OLD THEORY that overproduction is unthinkable, as measured by potential demand, the machine age has arrived at a stage where output must be controlled because it runs beyond consumption. Undoubtedly it is true that not all the needs of all the people are satisfied to the full. Thus theoretically production does not reach the ultimate. But production does reach the point where it overreaches the market as governed by the best methods so far devised for distribution of the world's wealth. And so for all practical purposes, or the manufacture of goods on a profitable basis, industry arrives at its ultimate for the time being.

New industries, supplying a product of popular appeal, naturally are at an advantage until they catch up with their elders and face the problem of finding a market for their output. The problems of many industries of this century have not until lately become those of textiles, which long ago attained a productive capacity which began to make distribution problems of paramount importance. Thus, while the newer industries have been confronted primarily with production problems, textile manufacturers have been charged with decadent methods. Rather it may be said that textiles have created the greater problem by coming first into contact with overproduction and in addition facing the wider competitive drive for markets by the new things offered the public.

Laying New Foundation

NOW THE TEXTILES are starting over, so to speak, and recent advices have been encouraging the belief that the cotton industry is as favorably placed as any in the matter of inventories to take advantage of the inevitable expansion movement in the business of the country. The curtailment of production to accord output to demand has been drastic, apart from the new movement toward elimination of night operation of mills. But if the industry has got down to a basis consistent with current conditions, it is only at the beginning of a new road toward the future. In this situation, it must study the broad field of industry, giving and taking from other lines, for a healthy growth.

Coming out of a period of depression, one must go cautiously, if confidently. One looks back and sees the evils of a boom, but one looks ahead to doing the most business possible. It appears doubtful whether human agencies can combine to prevent the cycles of business. The next thing is to pursue a course calculated to make the best of them. That means doing the most business possible, but within the limits of conservatism, which means not reaching for the utmost turnover that can be secured by reckless expansion. That course is akin to the attempt of the reckless speculator in the market who holds for the peak of inflation, only to get wiped out from overreaching. The producer of course must do business always in the present, yet he must also conduct his operations with an eye to the long future if he is to survive.

Spreading Production More Evenly

AMONG THE PROPOSITIONS gaining increasing attention as a means toward remedying the irregularities of plant operations in various industries, through reducing the peaks and valleys, is the expedient of balancing production over the alternating periods of active and dull times created by seasons in demand. The severe unemployment of recent months has been a factor to intensify the depression and so the canker of poor business feeds on itself. The economies practiced to ease the sore condition serve to aggravate it. So careful study of the methods being tried by the Proctor & Gamble Company, the Akron rubber industry and other manufacturing units is incumbent upon all manufacturers.

With mills operating on a more conservative basis, gauged in accordance with potential annual demand, this proposition will be easier of application than in the past. It is not a new idea, but it is untried. When the buyer is convinced that he cannot hold off till the mills have accumulated burdensome stocks, then dicker for lower prices, he will become reconciled to a fair basis. The seasons of demand even may be subject to change, as indeed they have changed in the wool industry although not under pressure of new methods in manufacture. Rather the contrary, for the woolgoods buyers have delayed their purchasing till close to the retail season, in view of the capacity of the mills to meet their demands promptly.

Concerning Stabilization

NEW EVIDENCE crops out to confirm impressions that the attempted artificial holding of prices at high levels is not sound stabilization. In the words of Richard Whitney, president of the New York Stock Exchange, "in large measure, the great popularity during recent years of attempts to manipulate prices has been derived from experience during the war. During that emergency that was of necessity an almost universal attempt to peg prices and rates of all sorts. It has left us with a hankering to tinker artificially with prices. Both Governments and private interests have engaged in this dangerous practice.

"Our own Government and that of Canada have attempted it in wheat. The Brazilian Government has experimented with coffee and valorization and the British Government with limitations of rubber production. In Cuba there was the attempt to fix the price of sugar. In Germany many products have been subject in their price tendencies to the action of the State cartels."

We have said not long since that stabilization in industry which is based upon holding firmly for prices representing a reasonable profit over cost of production is the sound foundation; with values changing naturally under varying methods, shifting of raw material markets, etc. This idea is supported by the results which have been achieved in the cases cited by Mr. Whitney—demoralization from which the commodities in many cases have not yet emerged. In the case of the European steel cartel, the latest advices indicate its disintegration. "Resistance to natural price changes," says Mr. Whitney, "can in the long run only result in an economic explosion.

Excess of Style Diversification

FOR A YEAR OR TWO, much has been made of the development of style and design as the salvation of the cotton industry. Indeed, this development has had notable results in the establishment of a great vogue for cotton fabrics. But while the common result has been noteworthy, in the individual case it appears that the idea of elaboration in styles has been overdone, or at any rate that mills have not been able to capitalize the heavy investment entailed because of lack of merchandising control. Perhaps, too, the unfortunate incidence of the depression has interrupted a favorable result. At any rate, a combination of circumstances has made it necessary to look carefully into the matter, including distribution.

Regarding the mill and distribution, for those manufacturers which have a product that can be identified to the consumer and is, therefore, a good advertising proposition, the way may be clearest. As says the Pepperell News Sheet, "formerly when a consumer desired to purchase a wash suit, cotton underwear, or other necessary cotton made-up articles, she had to rely entirely on the reputation of the store where the goods were sold. Such articles bore no well-known mark of identification and consequently the purchaser had no means of making sure that she was purchasing quality goods." Speaking of its advertising in Collier's, it adds: "Although the present advertising in Collier's will not correct the situation over night, it represents a long step in the right direction. By means of this advertising conducted by Pepperell, the fabric from which articles are made is identified to the consumers of those articles."

What the Southern Mills are Doing

THE ALABAMA COTTON MILLS, Fayette, Ala., recently installed equipment for spraying oil on their raw stock. The equipment was furnished by Borne Scrymser Co.

The Cherry Cotton Mills, Florence, Ala., recently equipped themselves with the Breton Minerol Process system of oiling cotton.

It has been announced that Bessemer Mattress Factory, Bessemer, Ala., was recently destroyed by fire. The fire was believed to have been started in the carding department. The plant was partially covered by insurance.

The new mercerizing machine recently installed by Yates Bleachery Co., Flintstone, Ga., is now in operation and has a capacity of 25,000 and 30,000 yards of cloth daily. This company is now able to finish all types of cotton piece goods, both fast color and commercial dyeing.

The Cotton States Arbitration Board, Atlanta, Ga., has equipped its cotton classing room with Bahnson humidifiers furnished by the Bahnson Company, of Winston Salem, N. C.

The Columbus (Ga.) Mfg. Co. is installing 5 Hermas shearing machines which are to be in tandem with other finishing equipment. The mill is also installing 144 more atomizer humidifier heads for one of the weave rooms.

It has been reported that Coopers, Inc., Los Angeles, Cal., manufacturers of men's and boy's knit and woven underwear and pajamas, will build a $2,000,000 factory, employing 300 persons on the initial payroll. They will begin operations by January 1, 1931, it is stated.

Georgia-Kincaid Mills, Griffin, Ga., have placed contract with the Bahnson Co., of Winston Salem, N. C., to install additional humidifiers in their weaving and also their winder and warper rooms.

It was recently announced that Manchester Cotton Mills, Manchester, Ga., had placed a large contract for additional humidifying equipment to be installed in their weave room, which equipment will be furnished by the Bahnson Co., of Winston Salem, N. C.

Hartwell Mills, Toccoa, Ga., are reported to have recently installed new machinery, and are now operating on both day and night shifts.

Darlington Fabrics Corp., Charlotte, N. C., manufacturers of draper and corset materials, have started making tapestry since the shipment of additional machinery from the home plant in Pawtucket, R. I. Due to the increased machinery and capacity they have employed 75 more workers.

Gaston Mfg. Co., Cherryville, N. C., was recently damaged to the extent of several thousand dollars by a severe wind and rain storm.

Erskine R. Boyce, of Mill Devices Co., Gastonia, N. C., and O. V. Russell have organized the Boysell Co., Inc., to manufacture a new type of chenille rugs. It is pointed out that this is done by a special attachment installed on a regulation knitting machine.

It has been announced that the consolidated companies, Falls Mfg. Co., and Southern Mfg. Co., Granite Falls, N. C., will install $30,000 worth of machinery in order to convert their Southern plant from a carded to a combed yarn mill.

Hannah Pickett Mills, Rockingham, N. C., recently installed 200 new looms, bringing their total up to 2,700.

It is reported that Somerset Mills, Inc., Roxboro, N. C., manufacturers of Jacquard Turkish towels are planning to enlarge their plant.

It is stated that contract has already been awarded by North Carolina Finishing Co., Salisbury, N. C., for the erection of two large warehouses and the remodeling and enlarging of their bleachery.

According to recent announcement, a new $1,000,000 corporation by the name of Raylaine, Inc., will erect a $500,000 plant to manufacture "raylaine," a recently invented synthetic fibre, which it is stated has a sheen like silk, looks like wool and is mothproof. Lawrence S. Holt, Jr., is chairman of the directors.

Victory Mfg. Co., Fayetteville, N. C., have purchased the Armstrong roll covering unit to handle Armstrong's seamless cork cots, which are being installed there.

It was recently reported that 21 new spinning frames and machine for truing and planing shuttles were being installed in the Erlanger Cotton Mills, Lexington, N. C. This is to enable them to increase their production.

James M. Craig, president of Somerset Mills, Inc., Roxboro, N. C., announces they are planning to enlarge their plant. These mills manufacture jacquard turkish towels. The Philadelphia plant may be merged with the local one.

Richland Cotton Mills, Columbia, S. C., have installed 63 electric motors at a cost of $40,000.

It is stated that Union Bleachery, Greenville, S. C., is installing a machine invented by Sanford L. Cluett for the Sanforizing process of making cloth shrink-proof. It is said that this will be the only one of its kind in the South.

Watts Mill, Laurens, S. C., recently announced that they had installed additional cards and combers, and had overhauled the card deprtment.

Industrial Rayon Corp., Covington, Va., who have just completed 190 homes for operatives, will construct 110 new dwellings. A modern dormitory has also been built.

New England Mill Situation

September 18th, 1930.

NEW ENGLAND COTTON MILLS are entering a period of revolutionary readjustments at the present writing if credence is to be given to the numerous rumors and conjectural reports current in the trade at the present time. Two reports are outstanding, one that leaders of two of the big mergers and of other large textile enterprises are working on a plan to stabilize the fine goods industry by means of a type of balancing corporation, and another that incorporation of "General Cotton Corporation"' has been accomplished" and its bids for two Fall River mills on a basis of exchange of securities set forth. Report has it that the proposed holding corporation and "General Cottton Corporation" are one and the same thing, although no confirmation of this is given.

According to New Bedford and Fall River mill men, a fine cotton goods "stabilizing or balancing" corporation with minimum capitalization of $1,000,000 having the power to buy up mills, run them, or distribute their property among members and destroy obsolete machinery, and intended to balance production with demand in subscribing mills is the object of leaders of the trade. This corporation would be wholly owned by the mills themselves, and its capital would be raised by a levy of 25 per cent per spindle on mills joining the group. The money would not be paid in except as necessary, and then would be assessed in proportion to size and volume of production.

Reports state that among those engaged in this plan are Malcolm Chase of Berkshire Fine Spinning Associates, Homer Loring of United Merchants and Manufacturers, Walter H. Langshaw of the Dartmouth Mill, New Bedford; Frank L. Carpenter of Davis Mill, Fall River; Israel Brayton of Lincoln Mill, Fall River; and other mill men. These have declined to be interviewed with regard to the proposition.

Various committees, according to the plan, will function under the aegis of the new corporation. The corporation committee is planned to include Malcolm Chase, Homer Loring, and Walter Langshaw. The stabilization committee is to include Andrew G. Pierce, president of American Woolen Company and interested in New Bedford cotton mills; Morgan Butler of Butler, Prentice Company, selling agents for the Butler and other important mills; and Charles F. Broughton, New Bedford mill man.

The corporation when formed will represent over 4,000,000 spindles, according to report.

Meantime it has developed that an organization known as "General Cotton Corporation" has been incorporated in the state of Delaware and the resident agent is Prentice Hall, Inc., of Dover, Del., and the incorporators are Horace A. Hildreth, 51 Randolph Avenue, Milton, Mass.; James T. Moultz, 11 Pinckney street, Boston, Mass.; and John G. Ross, 1616 Massachusetts avenue, Cambridge, Mass.

General Cotton Corporation, meantime, has been recommended as a purchaser of the Lincoln Mill and Davis Mill of Fall River in letters to the stockholders sent out recently by the board of directors of the two concerns. General Cotton has offered one and one half shares of its stock for each share of Lincoln Manufacturing Company stock, with General Cotton, or its nominee, assuming liabilities, and has offered six shares of General Cotton for each share of Davis Mill stock.

General Cotton is reported to have incurred no expense or liabilities aside from the costs of organization, according to the letters to stockholders of the Fall River enterprises.

The letters also state that Frank L. Carpenter of the Davis Mill has been elected to the board and named treasurer of General Cotton Corporation.

Reports are further current in the trade that a one to two year schedule of 50 per cent operation has been scheduled by the great percentage of New England fine goods spindles, and this is regarded in the trade as a forerunner of the stabilization plan.

Machinery manufacturers are said to have been enlisted in the plan. A mill taken over by the proposed or actual corporation might be operated by it, or it might be put out of business or partially cut down. Machinery would be made available to members, desirable pieces being turned over to member mills to replace any older machinery they might have. No machinery would be sold to outside interests, all left over being destroyed.

New England fine goods mills, meantime, have been doing a better business. There has been a seasonal upturn in the fine goods business, and added to this is the greater willingness of some buyers to purchase for forward delivery on the basis that prices, now low, might advance in case of successful negotiations toward stabilization of the industry. Berkshire Fine Spinning Associates recently reported the largest single week's business in six months time, with sales running considerably above full time capacity of their mills. Others have also enjoyed a marked improvement.

Indecision as to what will be most desirable for spring lines has deterred purchasing by many large converters and users of fine cotton goods, but this is beginning to clear up and within three or four weeks mills anticipate a considerable volume of buying against next season's requirements. Trading thus far has been largely for late fall and early spring requirements, and has run largely on staples. The recently held style show of the Cotton Textile Institute and cotton dress manufacturers has stimulated interest in cotton for spring, and the trade currently is confident of a substantial spring vogue for cottons.

Among outstanding developments in the New England industry during the month is the annual report of Pepperell Manufacturing Company, with mills East and South, issued as of June 30 and showing consolidated net income of $660,002, or $6.23 per share. A dividend of 6 per cent was declared. Net sales totalled $18,246,089.68, an increase of $1,483,982.22 from the previous year. A substantial reduction in inventory is noted. Profits of the previous year were $1,114,280.

Russell H. Leonard of Boston, was re-elected president and treasurer of Pepperell at the annual meeting of stockholders in Biddeford, Me., and Amory Coolidge was named vice-president and assistant treasurer; Donald B. Tansill and Allyn B. Macintyre, vice presidents; Paul Crockers, secretary and comptroller; and William Amory of Boston, chairman of the board of directors.

Mr. Leonard in discussing the position of the company reported very satisfactory profits for the first six months of the company's year, but difficulty due to the general, severe depression in the industry in the last six months. It remarked inclusion of Lewiston Bleachery and Dye Works, a wholly owned subsidiary, in the consolidated statement, although previously shown on the balance sheet as an investment. Completion of the new sheet mill at Lewiston, Me., and of the No. 2 Opelika mill at Opelika, Ala., is cited, together with acquisition of the Fall River plant for all combed goods, the latter being reported favorably. Disposition of all remaining property at Lowell, Mass., excepting one storehouse, is noted. Signing of an agreement to sell to the Cumberland County Power and Light Company all water power properties on the Saco river and the steam plant at Biddeford, Me., is noted, the agreement being subject to approval of the Maine utilities commission. Development of new lines of Pepperell sheets and pillow cases is cited as an important achievement for the year.

Cotton Comment

New Orleans, September 13th, 1930.

THE COTTON MARKET ruled rather erratic during the past month, bulging at times, only to decline again, but the tendency was downward. The coming of needed rains to much of the western and central belts, a somewhat larger government crop forecast than generally expected, small spinners takings, an unfavorable British Board of Trade report, small domestic consumption returns, prospects of further mill curtailment in Japan, as well as hedging and liquidation were depressing features.

There were some favorable developments during the period, such as short covering, some trade buying of contracts, large exports from the United States, a fair demand for spots in the South, and advices from the Northern goods markets were encouraging, but these features were more than offset by the unfavorable developments, which is reflected in values showing a loss of somewhat more than $5.00 per bale compared with one month ago.

The International Federation of Master Spinners were credited with issuing a statement, part of which follows. Linters not included:

World's consumption, bales—Season	1929-30	1928-29
American	13,023,000	15,076,000
Foreign	12,186,000	10,806,000
Total, all kinds	25,209,000	25,882,000

According to Garside, the world's carry-over of American, foreign and of all kinds, exclusive of linters, at the close of July, was as below:

Bales— Year—	1930	1929	1928
American	6,186,000	4,474,000	5,121,000
Foreign	4,447,000	4,678,000	4,215,000
All kinds	10,633,000	9,152,000	9,336,000

GOVERNMENT REPORT

As of September 1st	This Year	Last Year
Acreage for harvest, est.	44,791,000	45,793,000
Condition of crop	53.2	55.4
Indicated yield per acre, lbs.	153.2	155.0
Indicated crop, bales of 500 lbs. gross weight	14,340,000	14,828,000
Ginned to September 1st, counting round as half bales	1,878,253	1,568,434

Based upon Secretary Hester's carry-over figures and the government crop estimate, the indicated season's world's supply of American cotton, exclusive of linters is:

American cotton— Bales—	This Season	Last Season
World's carry-over August 1st	5,939,000	4,395,000
Indicated crop, gov. est.	14,340,000	14,828,000
Season's indicated supply	20,279,000	19,223,000

THE ASSOCIATION OF COTTON TEXTILE MERCHANTS OF NEW YORK AUGUST STATISTICS

Yards—	August 1930 5 Weeks	July 1930 4 Weeks	August 1929 5 Weeks
Production	218,815,000	165,850,000	307,538,000
Sales	235,272,000	180,147,000	312,635,000
Shipments	231,348,000	176,689,000	326,398,000
Stocks	442,996,000	455,529,000	364,060,000
Unfilled orders	226,422,000	222,498,000	355,095,000

August sales of domestic cotton goods were 107.6 per cent of production against 108.6 per cent in July this year and 101.7 per cent in August last year. Shipments were 105.7 per cent of production against 106.5 per cent in July this year and 106.0 per cent in August last year. Stocks at the end of August decreased 2.8 per cent against a decrease in July this year of 2.3 per cent and a decrease in August last year of 4.9 per cent. Unfilled orders at the end of August increased 1.8 per cent against an increase in July this year of 1.6 per cent and a decrease in August last year of 3.7 per cent.

BRITISH BOARD OF TRADE REPORT FOR AUGUST

Year—	1930	1929	1928
Exports of yarn, pounds	10,000,000	15,000,000	16,000,000
Exports of cloth, yards	168,000,000	321,000,000	341,000,000

CENSUS REPORT

United States— Bales—	This Season	Last Season
Consumption of lint, August	352,335	558,754
Consumption of linters, August	57,010	83,643
Consumption including linters, August	409,345	642,397
Mill stocks August 31st	1,011,661	800,989
Stocks in pub. stg. & whs., August 31st	3,464,699	1,382,226
Stocks in mills, pub. stg & whs., August 31st	4,476,360	2,183,215
Active spindles during August	25,873,978	30,230,386

TOTAL AVERAGE RAINFALL TEXAS, INCHES

Year—	1930	1929	1928	Normal
August	1.50	0.87	2.11	2.56
Nov. to Aug. inclusive	21.72	26.43	21.86	25.60

Spot sales at reporting Southern markets the past week were 240,817 bales against 246,015 for corresponding week of last year.

Compared with last season, exports from the United States the past week were 190,828 bales against 125,343; since August 1st, 635,645 against 486,663.

Thus far this season foreign spinners have taken comparatively more of American cotton than American spinners, as noted by the following comparatives:

American cotton: Takings—Bales:	This Season	Last Season
North and Canada	91,000	196,000
South	287,000	452,000
Foreign	522,000	559,000
World	900,000	1,207,000

WORLD'S VISIBLE SUPPLY OF COTTON YESTERDAY

Bales—	This Year	Last Year
American	3,862,928	2,219,747
Other kinds	1,910,000	1,714,000
All kinds	5,772,928	3,933,747
Middling in New Orleans today	10.63	18.55

While it is possible for the market to work lower because of the possibility of further hedge selling, the present price of the staple is compartively low, apparently below the cost of production, and consequently evidently at an investment level in view of the probability of higher, perhaps much higher prices in the distant future.

Low prices, especially comparatively very low prices, such as are now prevailing, generally make for larger consumption eventually, and when prices are comparatively very low in the winter, they are usually followed by an important decrease in the acreage in the spring, often accompanied by higher prices.

Spinners would probably make no mistake in buying at prevailing low prices, on a scale down if necessary, for future requirements.

★ $1.10 is maximum charge for repairing ANY flyer if it can be repaired, — includes reworking, new pressers applied, roving slots gauged, polishing and rebalancing.

$8,500...Saved Mill *by Repairing Worn Out Flyers*

Suggests Timely Repairs by Saco-Lowell's Specialized Repair Departments...

STEEL ROLLS, flyers, card flats, licker-ins and card grinders,—all can be reconditioned by Saco-Lowell like new. Saco-Lowell factory-made repairs are the cheapest in the long run. It's a business with us. We have the equipment and *know how*.

A RECENT example where a mill saved $8,500.00 of the cost of new flyers by having 5,500 worn-out flyers repaired by Saco-Lowell, suggests other important reconditioning projects that will be most profitable if made NOW. Saco-Lowell has pioneered in the repair field by building complete and modern repair organizations alongside of our regular manufacturing departments. The reconditioned parts delivered by these departments are so perfect that sometimes our customers refuse to believe that they are not brand-new. With such a service available at such low costs it is a most costly practice to use worn-out accessories.

Get our costs — inquire today — and get the work done NOW when your equipment can best be shut down.

SACO-LOWELL

MANUFACTURERS OF TEXTILE MACHINERY

147 MILK STREET, BOSTON, MASS.

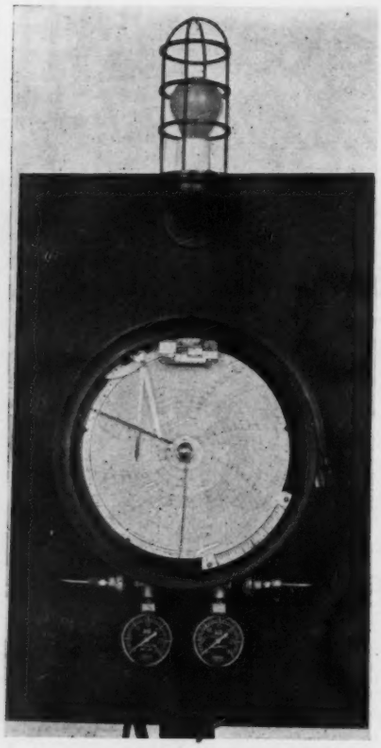
CHARLOTTE, N. C. SPARTANBURG, S. C. ATLANTA, GA.

New Textile Equipment and Publications

NEW FOXBORO DYE TUB CONTROL.

The new Foxboro dye tub control system, recently completed by The Foxboro Company, of Foxboro, Mass., is proving of rather unusual interest in the textile industry. The company has the following comments to make concerning the new device:

"This controller takes the preheated dye water being delivered to the machines, raises it to the exact temperature needed and holds it at this temperature for a definite time predetermined by the dyer. When the time is up, the instrument shuts off the steam and turns on a signal light.



New Dye Tub Control.

"The illustration shows the complete Foxboro Control panel. In addition to the temperature control unit, the instrument is equipped with a time scale and a movable index. The operator sets the time index to the point representing the total time for the dye operation. At the end of the period the control shuts off and the signal, shown in the illustration lights. If the operator finds that the batch requires longer time he merely sets the index for the increase in time and the steam is automatically turned on, the light extinguished and the process continues until the end of the period. The operator always has before him, as a guide, a complete record of each operation in time and temperature. The possibilities for matching shades with this new control system are unlimited."

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DAVISON'S TEXTILE BLUE BOOK.

The publishers announce the completion of the new Davison's Textile Blue Book for the 65th year.

Over 10,000 mill reports have been most carefully revised. Thousands of changes in mill names, officers, goods made, equipment, and so on, have been made. The various dealers' lists, covering over 20,000 firms, have all been brought up to date.

It is stated that the book carries a new classification of cotton mills, and that these classifications will benefit many users of the blue book, among which will be: first, those concerns using any cotton fabric or other mill products, will be able to obtain from the clasification many sources of supply for securing competitive prices; second, all firms selling machinery, raw material, yarn, supplies, or certain kinds of raw cotton, will be aided by these classifications dividing mills into separate lists.

The publishers state that two editions are issued—the office size, 1,900 large pages with a new Permatex cloth in gold binding, is printed on fine paper and contains all of the features of the Blue Book, while the "Handy Edition," also Permatex, but printed on 1,700 thin pages has all information given in the office size, except the classified directory of mills, and the textile buyer's guide.

The Salesman's Directory, bound in flexible covers, size 3½ x 5¾ x 1½ inches thick, 550 pages, is much smaller than the handy edition, but has full reports of all textile mills, dyers, finishers and bleachers arranged alphabetically—all mills under each town, this being different from the Textile Blue Book, which sub-divides them into cotton, woolen, silk, knit goods, and so on.

The volumes can be obtained from the publishers, Davison Publishing Company, 50 Union Square, New York. Prices delivered: Office edition, $7.50; Handy Edition, $5.00; Salesman's Directory, $4.00.

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NEWPORT ACID ANTHRAQUINONE BLUE 3G.

The Newport Chemical Works, Inc., announce that, as are the other colors in the Acid Anthraquinone series, Newport Acid Anthraquinone Blue 3 G is distinguished by excellent fastness to light, and that it also levels exceptionally well, making it useful as a shading color since it may be safely fed on even at the boil. They also point out that the fastness to fulling may be considered only as moderate when the color is dyed acid, but it should be noted that a very great improvement in this respect is obtained by after-chroming which process does not materially alter the shade.

The company also announces a new dye by the name of Thianthrene Scarlet G Paste Fine, which they state is especially applicable for printing on cotton, rayon or pure silk, in either direct or colored discharge patterns. They state that the general fastness is most satisfactory, particularly to washing, chlorine, perspiration, cross dyeing and acid or alkali spotting.

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MOSSBERG PRESSED STEEL.

Mossberg Pressed Steel Corporation, Attleboro, Mass., recently published Catalog No. 105, which gives descriptive information and data pertaining to pressed steel beams, beam heads, drop wires, braider carriers, cop holders and allied equipment for the textile industry, which have been developed under the personal engineering direction of Frank Mossberg. The catalogue would prove very helpful to anyone dealing with the aforementioned items, and it may be obtained upon request to the company.

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A NEW NITRO-CELLULOSE YARN.

The Tubize Chatillon Corporation, 2 Park Ave., New York City, manufacturers of acetate, nitro-cellulose, and viscose yarns, announce the offering of a new nitro-cellulose yarn, under the name Sanconize. They state that the new yarn is a synthetic product, interesting to rayon users, and is manufactured by the nitro-cellulose process invented by Count Chardonnet in France approximately 40 years ago. The Tubize Chatillon Corporation are exclusive owners of this process in the United States.

Sanconize is a self-translucent yarn with a dull luster, somewhat duller than the luster of Tubize, another ni-

THE G·T·M·

Goodyear Technical Man—is bad news for the tough job. His attack is varied. Now it is movement of goods, now of power, now the disposal of waste. Everywhere he bears down on costs and builds up efficiency. He has a hawk's eye for waste, a faculty for improvement. Whether it is movement of materials, air, liquids, or engine-power, by the careful application of Goodyear Mechanical Rubber Goods in Hose, Belting, Molded Rubber Goods and Packing, he has unkinked many a hard knot. He gets the work out.

In textile manufacturing, the G.T.M. has an outstanding record. He knows your work and how to reduce its costs. He has specified Goodyear Compass (Cord) Textile and Compass Endless Belts to drive your machinery swiftly and smoothly. He is introducing to your multiple drives Goodyear Emerald Cord Multiple V Belts for new operating freedom. He has supplied Goodyear Wingfoot Air Hose and Goodyear Water, Steam, and Fire Hose for economy in all phases of your work. He is an expert on your job. He can save money for you now.

For complete data on greater efficiency the G.T.M. can bring to your job, just write to Goodyear, Akron, Ohio, or Los Angeles, California.

THE GREATEST NAME IN RUBBER

GOODYEAR

BELTS MOLDED GOODS HOSE PACKING

tro-cellulose yarn manufactured by the company, but not quite as dull as Chardonnet yarn, according to the Chatillon Corporation. They state the individual, dull luster, characteristic of this yarn is obtained by the use of the opake process exclusive with this company.

It is stated the new yarn is designed to meet all requirements of the manufacturer of popular priced hosiery and underwear.

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NINETEEN THIRTY EDITION OF THE YEAR BOOK.

The 1930 Edition of the Year Book of the National Association of Cotton Manufacturers, the reference work of the industry, is being distributed to mill executives in the cotton manufacturing countries of the world.

It is pointed out that the current issue contains all of the features which have made the work known as the most comprehensive compilation of data of interest to the manufacturer available. At the same time, through rearrangement of statistics and other material the volume has been made slightly smaller and more compact. The conservation of space has been made with no sacrifice as to size of type and legibility and has resulted in making it easier to find the information desired.

Among other things, the book presents the cotton manufacturer a detailed picture of the particular parts of the cotton crop in which he is interested, according to Secretary Russell T. Fisher.

The present volume is believed to include practically all of the authentic information about the industry that manufacturers and other interested persons might want.

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OFFICIAL AMERICAN TEXTILE DIRECTORY.

The 1930 volume of the Official American Textile Directory, has just come off the press, and it will be noted that it is now combined with the American Directory of the Knitting Trade, for beginning with this issue these two standard reference mediums merge. Since the same specialized knitting information formerly carried in the American Directory of the Knitting Trade is now carried in the combined volume, it is possible to have under one cover complete data covering the entire textile field.

The editions of the 1930 volume now available are "Office Edition", $6.00 per copy (stiff covers thumb-indexing); "Travelers Edition", $4.00 per copy (flexible covers light weight), "Vest Pocket Edition", for the use of salesmen and containing mill text only, will sell at $2.00 each.

The McGraw-Hill Catalog and Directory Company is now the publisher of the Official American Textile Directory and the American Directory of the Knitting Trade, formerly prepared by the Bragdon, Lord & Nagle Company.

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BULLETINS ON ELECTRIC MOTORS.

The Louis Allis Co., Milwaukee, Wis., have issued a complete set of bulletins describing the various types of Louis Allis "Custom-Built" motors. Bulletin 502-A covers inverted rotary converters; No. 504 discusses slip ring motors; No. 505-A describes squirrel cage motors; No. 507 covers direct current motors; No. 508 covers "explosion-proof" self-ventilated squirrel cage motors; No. 509 covers frequency converters; and No. 510 describes the line of totally-enclosed fan-cooled squirrel cage motors, Type J, 3 to 100 hp. Jones Machinery Co., Box 1093, Atlanta, Ga., is an agent of the company.

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VARIABLE SPEED TRANSMISSION.

Reeves Pulley Company, Columbus, Indiana, announce that by means of the Reeves electric automatic control the speeds of the transmission and, in turn, of the machine or machines to be controlled, may be infinitely regulated over a predetermined range entirely automatically, while the operator of a machine equipped with the remote control may, without leaving his position, accurately regulate the speed of one or more machines merely by pressing a button.

It is stated that in range finishing of textiles, the electric automatic control reduces the percentage of "narrows" from 1 per cent to 1-8 of 1 per cent; on the wind-up of rayon spinning frame it eliminates stretch and variation in yarns; and on beaming warpers reduces time required to fill a beam from 16 to 8 minutes.

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BOOK ON SUCCESSFUL COTTON MILL MANAGEMENT.

"The Successful Management of Cotton Mills, Its Modern Methods," is the title of a book recently published by Sheth Ranchhodlal and Amratlal, Sankdi Sherry, Ahmedabad, India. The author is Henry D. Martin, who is well known in this country in the textile manufacturing business. The material in the book was originally published in America in two volumes, "Successful Management of Cotton Mills" and "Progress and Profit for Mill Men." The information in the original editions of these books, together with some additional chapters to augment it, represent the present volume.

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NEW DEVICE FOR LABELING GOODS.

Patent has been applied for on an ingenious device by the Duplan Silk Corporation for the protection of their DuRay fabrics against inferior substitutes. It secures and seals its quality-recording-insignia to all piece goods of DuRay fabrics.

It marks the first appearance of a combination identification mark on rayon piece goods under the provisions of the recently-established Viscose Company quality-control plan.

It is stated that through the use of this new device the identification label is not destroyed until the last quarter yard of a piece of fabric is sold. It enables the customer to be assured that the merchandise purchased is not only a fabric of the Duplan Silk Corporation, but one that is made entirely of the Viscose Company's Crown brand rayon yarn. It also assures the purchaser of color and texture protection. Both trade marks are secured in such a way to the actual piece of cloth that this definite identification is possible as long as there is merchandise to offer.

This new device can be described briefly as follows: The end of goods to be rolled on the tube from which the merchandise is sold is partially split. This loose end of the fabric is folded over so that it extends beyond the edge of the tube.

The loose end is sealed to the tube with an attractively-designed paper band upon which appears the insignias of the Duplan Silk Corporation's DuRay fabrics and the Viscose Company's Crown brand rayon yarn. The end of the fabric which hangs beyond the seal bears the printed insignia of the Duplan Silk Corporation, which further establishes the identity of the cloth.

This identification has been placed on all DuRay fabrics which are now being shipped to the trade.

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NEW FLAT BED MACHINES.

Class 51400 is the designation of a new line of flat bed seamers now available for sleeving, sleeve piecing, center front operations on shirts and other seaming work, according to recent announcement by the Union Special Machine Company, Chicago. The company claims many desirable features for this machine, increased production and perfection of work being two of major importance.

H&B
AMERICAN MACHINE COMPANY

PAWTUCKET, R. I.

EXTENDS TO YOU A CORDIAL INVITATION TO VISIT THEIR EXHIBITION AT THE **SOUTHERN TEXTILE EXPOSITION** AT **GREENVILLE, SOUTH CAROLINA, OCTOBER 20 TO 25, 1930,** AND SEE THE MOST RECENT DEVELOPMENTS IN TEXTILE MACHINERY.

REPRESENTATIVES WILL BE IN DAILY ATTENDANCE.

BOSTON OFFICE
161 Devonshire Street
C. E. RILEY, Pres.

SOUTHERN OFFICE
815 Atlanta Trust Co. Bldg.
ATLANTA, GA.

NEWS ITEMS *with a Textile Slant*

ELECTED OFFICERS OF INDUSTRIAL RAYON.

Coming as a deserved recognition of their valuable services to the company, Hayden B. Kline and Arthur A. Murphy were made officers of Industrial Rayon Corporation at a meeting of the Board of Directors, held during the month of August. Mr. Kline was elected vice-president in charge of plant operations, and Mr. Murphy, vice president in charge of sales.

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G. E. VAPOR LAMP CO. MOVES OFFICE.

General Electric Vapor Lamp Company, of Hoboken, N. J., formerly the Cooper-Hewitt Electric Company, recently announced that their Knoxville office had been moved to Atlanta. Their new office is located at 611 Red Rock Bldg.

Frank E. Keener and John R. Baer will be the representatives of the company, working out from the new office, while the supervision of the office will be under Walter W. Becky, of Cincinnati. Mr. Keener and Mr. Baer have served the trade in this territory for sometime, and it is due to the fact that they feel by having a more centralized location they will be better able to contact and offer their services to the different industrial plants that prompted the moving of the office to Atlanta.

The company states that they recently placed on the market a Neon Glow Lamp, which is used for indicator and night lights, and that it is interesting to note that of the two styles made, one uses only 2 watts while the other uses ½ of a watt.

The company extends a special invitation to the trade to call upon their new office any time any of their lighting engineers may be of service.

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PIONEER POLE & SHAFT CO. SELLS PICKER STICK BUSINESS.

The Pioneer Pole & Shaft Company recently announced that they had sold their picker stick business, good will, plant personnel and trade mark to the Hickory Products Division of the Pearl River Valley Lumber Company, of Canton, Miss. This company will continue to furnish the "Pioneer" brand sticks, as furnished by Pioneer Pole & Shaft Company.

It is pointed to that the Hickory Products division is a separate and distinct unit with its own logging, milling and manufacturing facilities, making various finished hickory products. They are the largest producers of southern hardwoods in this country, and own the largest tracts of standing hickory.

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NEW MEMBER ELECTED TO BOARD.

At a meeting of the board of directors of the Roessler and Hasslacher Chemical Co., held during the latter part of August, Dr. Edward A. Rykenboer was elected a member of the board, replacing Mr. George F. Hasslacher, who resigned as director and assistant secretary during the month of July.

Dr. Rykenboer is 41 years of age, and is known as a man of fine personality, who possesses exceptional executive ability. He is a great favorite among his associates.

At the same meeting Mr. J. Carlisle Swaim was elected assistant secretary. Mr. Swaim is also 41 years of age, and is looked upon as a man possessing unusual ability.

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RELIANCE MOVES BOSTON OFFICE.

The Boston office of the Reliance Electric Engineering Company, manufacturers of alternating and direct current motors have moved from 80 Federal Street to their new quarters at 89 Broad Street. R. H. Smith will continue as district manager of this territory.

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VISCOSE QUALITY CONTROL PLAN.

A partial list of organizations that have signed contract-agreements with the Viscose Company under its quality-control plan is announced by John A. Spooner, merchandising director of that company. It is stated that it includes prominent manufacturers of piece goods, knitters, converters, dress manufacturers and manufacturers of men's and women's knit underwear garments.

In adopting the Viscose plan, it is explained that each of these producers agree to maintain definitely established construction specifications in order to retain the right to use the Crown brand label and insignia of the Viscose Company on their merchandise. In the case of knitters of underwear and undergarments, these manufacturers also agree to submit their specifications for size and cut to the Better Fabrics Testing Bureau for acceptance before agreement can be reached with the Viscose Company, it is stated. According to authorities, no producer of rayon merchandise who has not entered into such agreement with the Viscose Company will be permitted to affix the Crown label or trademark to his goods.

In making this partial list, Mr. Spooner states: "Each one of these manufacturers is confident with us that the benefits of our mutual action will be manifold, effecting happily not only the manufacturing portion of the rayon industry but equally as much the retailers of the country and the ultimate consumer as well.

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CLEMSON COLLEGE TO HAVE BOOTH.

It has been announced that the Clemson College Textile Department will maintain an exhibit at the Southern Textile Show in Greenville, October 20th to 25th. Director H. H. Willis extends a cordial invitation to all chemists, dyers, executives, and other mill men to visit the Clemson booth. Among the features of the exhibit will be a large display of rayon and synthetic yarn materials in all stages, from the crude cellulose to the printed or dyed and finished goods. Another feature pointed out by officials of the school is the exhibit which will probably represent the largest and most diversified collection of dyestuffs color cards ever offered for reference in the South.

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OFFICIALS OF WHITINSVILLE MAKE TRIP ABROAD.

Miss Clara F. Trowbridge, president of the Whitinsville Spinning Ring Company, with Stuart F. Brown, treasurer, and Mrs. Brown, recently made a six weeks' trip to the British Isles and France. Mr. Brown devoted a large part of his time to the company's interest.

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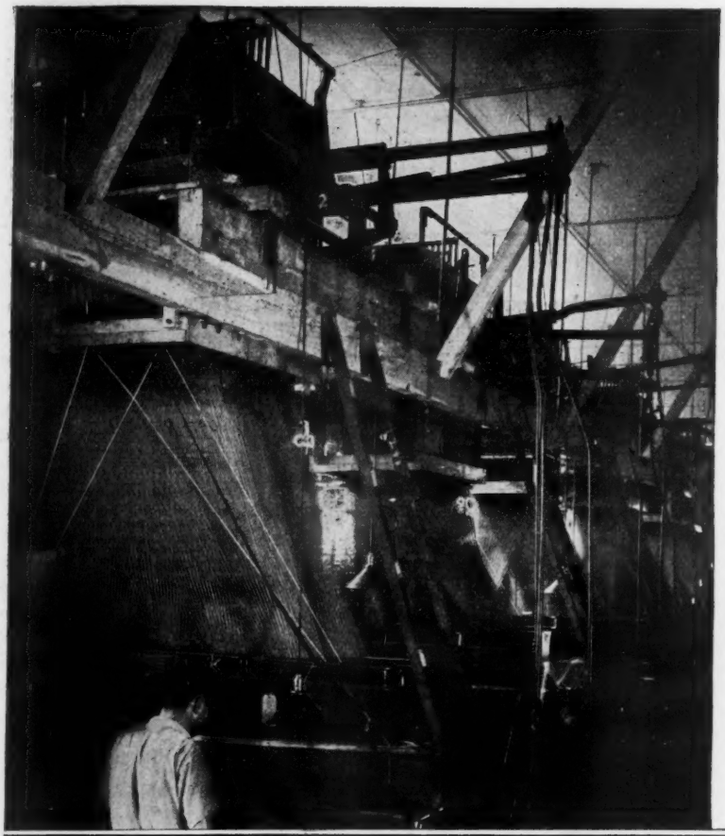
LOCKWOOD GREENE TO MOVE CHARLOTTE OFFICES.

It was recently announced that the Charlotte, N. C. offices of Lockwood Greene Engineers, Inc., will be consolidated with the Spartanburg offices.

J. Norman Pease, who has been manager of the Charlotte offices for the past ten years, has been transferred to the executive offices of the company in New York. James Wardlaw, assistant manager of the Charlotte office, will become assistant manager of the Spartanburg offices. Both Mr. Pease and Mr. Wardlaw are widely known in the textile industry.



HALTON'S JACQUARDS CAN BE BOUGHT ON MONTHLY PAYMENTS. WRITE FOR DETAILS.

"A failure usually is brought along by a number of prime causes, among which obsolete machinery usually represents 50% of the evils one could list."

*—Editorial from a Leading Textile Publication**

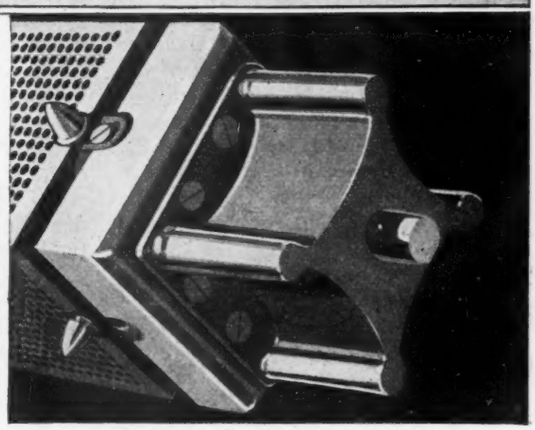
And if it isn't failure—it's stolen profit!

A failure takes some time to actually develop—but every day, in thousands of mills, good profits are being stolen by decrepit, out-of-date, obsolete machinery!

It's an old story—but now you can do something about it! Now you can scrap every profit-thieving jacquard in your plant and install the same kind of efficient, profit-producing jacquards as the modern, money making mills use! They're Halton's Jacquards—operating in the plants of the leaders of the industry for one reason—they pay for themselves!

If you're handicapped by old machinery, why not give yourself an even break with the leaders in the industry? Install Halton's Jacquards immediately and let them pay for themselves out of increased profit per unit thru the Halton Finance Plan. If Halton's Jacquards don't deliver a substantial profit—why does Barrymore use them—or such mills as Duplan Silk, or F. Schumacher, or Duane Silk?

*Name on request.



Cylinder shafts are driven in each end—not through entire length. Replacement is quick. Let our catalogue show you other cost reducing improvements. Get it.

HALTON'S JACQUARDS

THOMAS HALTON'S SONS • • • "C" and Clearfield, Philadelphia

SELLING AGENTS

H. A. FORBES
PATERSON, N. J.

THOMAS S. CAPPER, INC.
CHARLOTTE, N. C.

FRED H. WHITE
CHARLOTTE, N. C.

NOTES ABOUT MEN YOU KNOW OR KNOW ABOUT

L. Lanier, agent of the West Point Manufacturing Co., West Point, Ga., died at the Langdale (Ala.) hospital on Tuesday, September 16th, at the age of 48 years. Mr. Lanier was a brother of George H. Lanier, president of the organization. His widow, two daughters and five sons survive. "Mr. L." as he was affectionately known by hundreds of friends and associates in the "Valley", where the West Point company's mills are located, was most popular with the mills' employees, as well as with their business associates. His passing has saddened the hearts of many who knew him as a true man and lovable companion.

J. W. McElhannon, for some time agent of the Lowe Manufacturing Company, Huntsville, Ala., has been given charge also of the Shelbyville Mills, Inc., Shelbyville, Tenn.; serving now as agent of both plants under the direction of **George S. Harris**, of the Hunter Manufacturing & Commission Co.

M. R. Harden recently resigned his position as superintendent of the Delgado Mills, Wilmington, N. C.

W. B. Tucker, formerly manager of the Greenville, S. C. office of the Armstrong Cork & Insulation Co., has been transferred to the home office of the company in Lancaster, Pa. His new duties will place him in charge of all textile work of the company, including cotton, silk and worsted.

George H. Batchelor, who has been with the company for five years in the south, is succeeding Mr. Tucker, while **T. L. Hill** will succeed Mr. Batchelor.

T. D. Pickell has resigned as superintendent of the Archer Hosiery Mills, Columbus, Ga. He will be succeeded by E. P. Hamblen, of Chattanooga, Tenn.

W. E. Tarrant is now head of the weaving and designing department of the new Textile School of the Alabama Polytechnic Institute, Auburn, Ala.

R. F. Murry, who has been second hand in spinning at the Mauney Mills, Kings Mountain, N. C., has been promoted to boss spinner.

Charles G. Hill, prominent cotton manufacturer and one of the leading business men of Winston Salem, N. C., died on Friday, September 5th, following a long illness. He was 52 years of age. Mr. Hill was for many years president of the Arazon Cotton Mills, of Thomasville, N. C., retiring from that position some time ago, but continuing as chairman of the board of directors. He was a past president of the Cotton Manufacturers Association of North Carolina, and widely known in the textile industry.

Charles Iceman, retired cotton manufacturer of Monroe, N. C., died on September 7th from an acute heart attack. Mr. Iceman, who was 65 years of age, founded the Icemorlee Mills, of which he was president for many years.

C. D. Boling, for the past 35 years superintendent of the mechanical department of the Richland Mills of the Pacific Mills, at Columbia, S. C., has been made superintendent of the mechanical department of all the plants of the Hampton division of the Pacific Mills. **A. C. Boling**, his brother, who has served the company for 30 years, has been appointed supervisor of machinery in the Richland and Capital City Mills, at Columbia.

J. F. Sentel was recently made overseer of carding at the Borden Mfg. Co's. plant at Kingsport, Tenn.

J. H. Clark, head of the spinning department of the Borden Mfg. Co., Goldsboro, N. C., has resigned.

W. B. Gore, formerly superintendent of the Morgan Cotton Mills, of Marshville, N. C., has been appointed general manager. He will succeed George Medlin.

W. C. Bobo has been named to succeed E. P. Cofield as general superintendent of the Gossett Mills, of Anderson, S. C.

J. W. Rowell, overseer of carding at the Saratoga Victory Mills, Inc., of Albertville, Ala., has been made also overseer of spinning, spooling and warping.

H. E. Conyers has been promoted from day second hand to night overseer of weaving at the Kershaw Cotton Mills, Kershaw, S. C.

L. L. Mason is now manager of the dyeing and finishing plant of the Crompton-Shenandoah Co., Waynesboro, Va.

Herbert Booth, formerly of the Federal Phosphorus Company, recently became connected with the Manufacturers Soap & Chemical Co., of Cleveland, Tenn. Mr. Booth, whose experience in the textile field has represented a span of 20 years, will cover the textile and allied trades for this concern.

A. Stanley Llewellyn, manager of the Wateree Mill of The Kendall Company, of Camden, S. C., is the new South Carolina Legion chief. He was chosen unanimously. The fact that he attained this honor and is Yankee born and educated, caused the Savannah (Ga.) Morning News to comment editorially as follows: "it's not your birthplace that counts."

W. F. Hall, Jr., of Statesvile, N. C., was recently added to the sales force of Geo. B. Pfingst, Inc., silk yarns, Philadelphia, Pa. He is to cover the entire southern territory. He has previously been identified with Charlotte Knitting Mills, Charlotte, N. C., and Statesville Knitting Mills, of Statesville, N. C.

H. P. Southerland, formerly general foreman of knitting at the Charlotte Knitting Co., Charlotte, N. C., recently resigned his position to accept the position of superintendent of the Lyerly Full Fashioned Mills, Hickory, N. C.

Thomas Sydney Bangle, night superintendent of the Proximity Cotton Mills, Greensboro, N. C., died suddenly at his home in Greensboro on September 6th. He had been with the Proximity Mills for many years, and was a brother of James A. Bangle, general superintendent.

L. V. Andrews, who until recently was superintendent of the Edna Cotton Mills, Reidsville, N. C., has accepted a similar position with the Martinsville Cotton Mills, Martinsville, Va.

Charles Augustus Raht, president of the Richmond Spinning Company, president of the Chickamauga Knitting Mills, vice-president of the Chattanooga Implement Manufacturing Company and prominent clubman, died in Chattanooga during the first part of September. His death was the result of injuries he received in a fall down the stairs of his home.

"EVERY KNOT A WEAVER'S KNOT"

HIGH SPEED

alone does not bring maximum improvement in

WARPING

We find mill men who have the erroneous impression that the success of modern high speed warping as a means of increasing warping economy depends principally upon the high *speed* of the new warpers. They seem to think that all they have to do is buy warpers that will run at 350 to 500 yards per minute and the result will be increased production, lowered costs, etc.

To some extent this is true. *But*—the extremely important factor of *yarn tension* is too often forgotten. Any experienced mill man knows that it is impossible to speed up the old style slow speed warpers beyond a certain point because the tension on the yarn becomes so great that its natural elasticity is destroyed. The increased tension also causes frequent breaks in the yarn, requiring wasteful warper stops for piecing up and producing numerous knots which decrease the quality of the warp. It is necessary, in the new warpers, to provide some means for putting only the very minimum of tension on the yarn, or the benefits of high speed warping are altogether lost.

These factors were appreciated and provided for in making the Barber-Colman High Speed Warper. To obtain the lowest possible tension it was necessary to devise an improved means of handling the yarn both on the spooler and the warper. The result was the "cheese" package with its easy-running ball-bearing core. The success of Barber-Colman machines in giving lowered costs and at the same time an improved product can be attributed in a great degree to this important factor of *low tension*.

Barber-Colman Company will have a Spooler and Warper on full demonstration at the Greenville Textile Exposition to be held in Greenville, S. C., October 20th to 25th. If you are at all skeptical about any of the statements which have been made in connection with Barber-Colman products—either for them or against them—we will be more than pleased if you will call at our display. Let us explain the details of the machines and show you how they produce the remarkable results which they do.

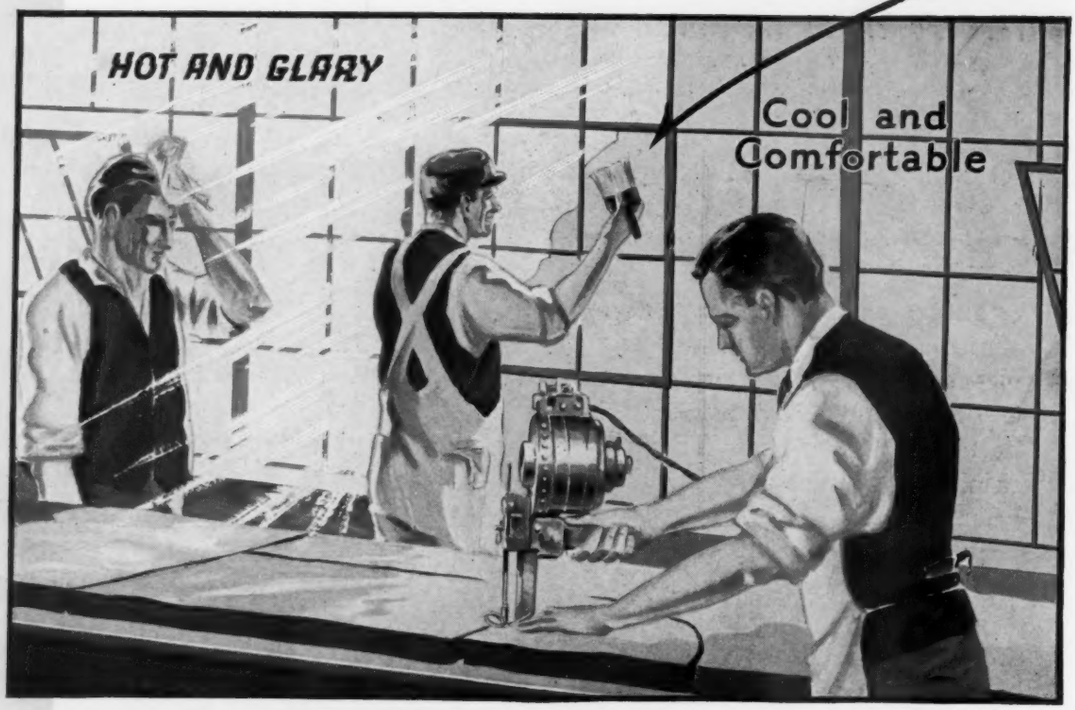
See our demonstration at the Greenville Show

BARBER-COLMAN COMPANY

General Offices and Plant, ROCKFORD, ILL., U. S. A.

FRAMINGHAM, MASS. GREENVILLE, S. C.

Merely Coating Your glass with "*No-Glare*"



1. Banishes Glare and Reduces Heat 10° to 15° while Admitting 94% of Light . . . . .

SKYCO No-Glare is a sky-blue liquid that you paint or spray on the glass of your windows and skylights. The resulting film of No-Glare FILTERS the intense glaring sunlight, letting in 94% of the light but rejecting *all* of the tiring glare and 15° of the heat (actual thermometer tests). Goes on *outside of glass*—yet rain or weather conditions do not affect SKYCO No-Glare. Neither will it rub or flake off. Yet you can remove it easily with warm water and a brush. *Just as effective if applied on inside of glass.*

2. Saves you the Cost of Expensive Shade Equipment . . . . .

Modern mechanical window shade equipment costs a lot of money these days—both for installation and upkeep (repairs and replacements). All this heavy expense can be avoided by simply coating your glass with SKYCO No-Glare. It saves its slight cost many times over in one season.

A single gallon ($3.50) covers from 700 to 800 square feet of glass. **One application lasts throughout sun-glare season. Absolutely guaranteed. Used by textile mills everywhere. Sold by mill supply houses.**

Use our convenient trial offer . . . . .
Order a gallon today at $3.50 and try it on a "glary" window.

THE SKYBRYTE COMPANY, 1919 E. 19th St., Cleveland, O.

Reduces Heat 10° to 15°—Yet 94% of Light Maintained

SKYCO No-Glare

Gives a Cool Diffused Light that is Restful

AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brothers along,
"Old-Timer" finds the sunshine of living

Are You a Capitalist?

OLD-TIMER generally has a way of giving you a different slant on something that is right before your eyes. Take this article for instance. "Are you a capitalist?" No, of course none of us got a place on that list of "rulers of America" prepared by Ambassador Gerard recently; and maybe, in these times, many of us may be in such a condition as to make that question seem ridiculous, and yet . . .

We have a job, we have a mind, and we have responsibilities, and those are the assets OLD-TIMER is talking about. He makes us see that, according to his interpretation, we *are* capitalists; and then he leaves us, as usual, with this parting shot:

What are you doing about it?

TO BE SURE you are. Every overseer and superintendent is. So are the section man and operatives for that matter. Of course some of us have more capital than others. That will always be so—and it should be.

Because some of us work harder than others—some of us are more saving than others—some of us drift along the line of least resistance—and then some of us just naturally don't give a damn.

But the Creator has very wisely made us so that we are rewarded for what we do. That is, for the way we manage *ourselves*, just like the firm we work for rewards us for the way we run our jobs.

Unfortunately, the word capitalist is usually interpreted to mean only a man of immense wealth, and let me say in passing, so to speak, that the capitalist of great wealth makes possible the tremendous progress which this and the other countries are enjoying inasmuch as this great wealth enables men to work together and accomplish more than any set of individuals could accomplish by themselves. It makes possible research that no individual could develop. It makes possible the many comforts and luxuries which the average man has, and which he otherwise would never have.

But the point I was leading up to, is to show you, brother, that you are a capitalist in the literal sense of the word. You are a leader, aren't you? You have a number of people working for you. You are not paddling along by your individual self.

The dollar capitalist has the dollar working for him. You have people working for you. Both of you are capitalists.

Oh yeah, you say, we all know that and I grant that you do, but the one big thought OLD TIMER has been trying to get you to realize for years is that you do not seem to realize that you are *two* personalities.

One is your duty to your employer, your obligation to give your firm all that is in you, your obligation to improve yourself mentally by a systematic system of study, by a concentrated study of that greatest of all problems, human nature.

All of these, I say, represent your obligation to your employer, and it is a source of great satisfaction to realize how many outstanding overseers and superintendents we have who are really making good.

But that other personality, that other side of you that is yourself, what are you doing about it?

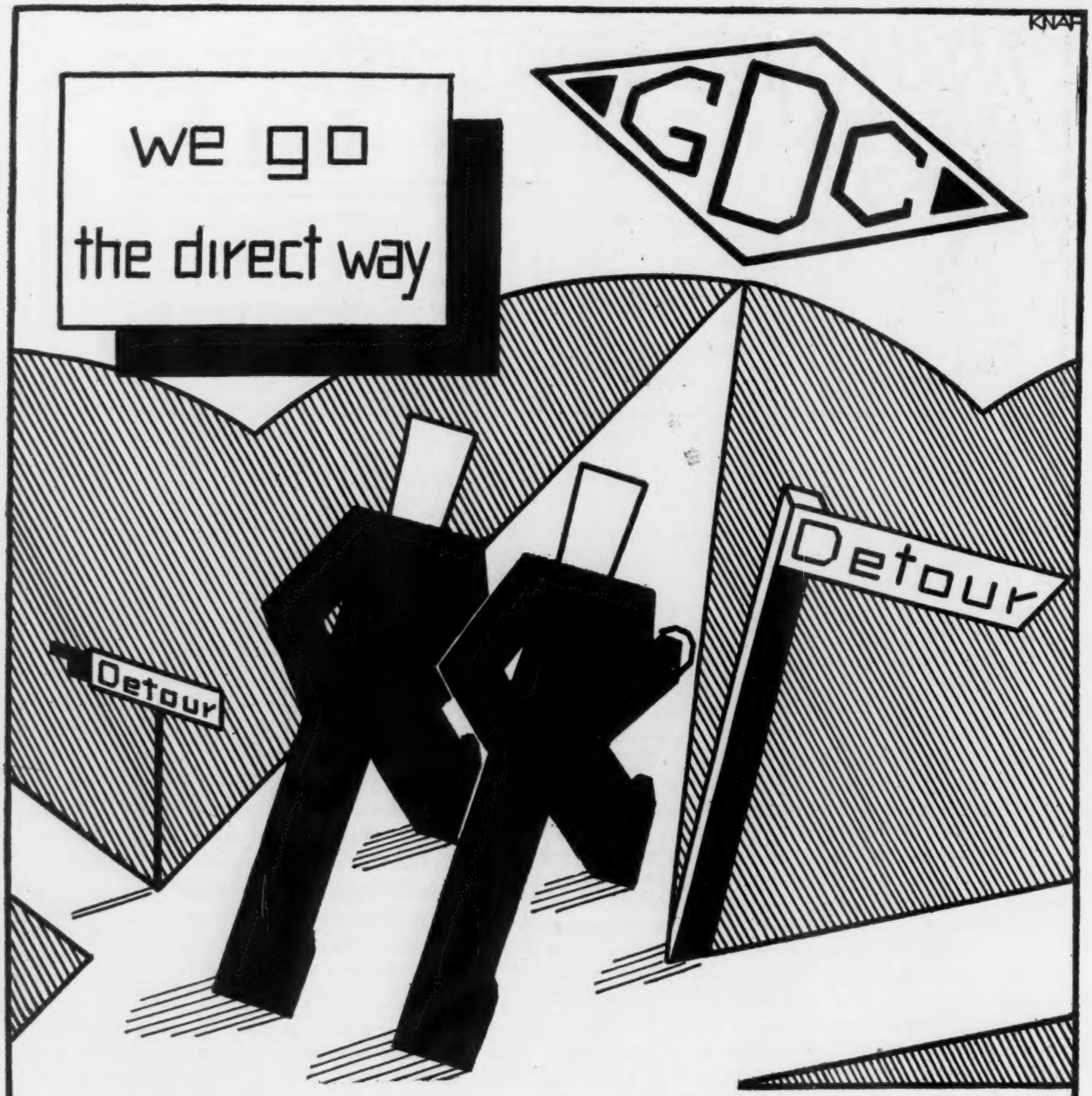
You are a capitalist, whether you have a dollar in the bank or whether you are worth a dollar in property or not; that brain of yours is your capital.

You are running your job all right. Now are you running *yourself* all right?

Have you ever gotten off by yourself, where nothing could interrupt your line of thought, and taken stock of yourself?

Let me make a rather crude illustration: The young man only a few years out of college where he majored in athletics—as most college men aspire to do. He had become nervous, he had no appetite, he was losing weight, etc.

Now he is in his family doctor's office and among many other things, the doctor says, "By all means, you must cut out the cigarettes. You are smoking entirely too many. They will ruin your lungs. You are liable to develop some dreaded disease . . . By the way, have



WHY DETOUR?

FOR EXPERT INFORMATION AND TECHNICAL ADVICE APPLY DIRECT TO

GENERAL DYESTUFF CORPORATION

230 FIFTH AVENUE, NEW YORK, N. Y.

you a match?"

The doctor was asking the young man for a match to light his (the doctor's) cigarette.

The doctor had studied medicine. He knew the right thing to tell his patient, but he did not or would not tell himself the right thing.

How about you, Mr. Overseer or Superintendent? Do you know yourself? Are you using your capital (your brain) to the best interests of yourself?

A study of ancient history reveals that there have always been capitalists, that is, leaders. When man lived in little bands, there was always a capitalist, a leader. So it is with practically all animals, and we are animals, you know.

You can start out and buy cattle or horses or sheep from several different parts of the country. Put them together and in a few hours there will develop a leader. There have always been men who stood out as leaders just like there has always been one horse, one sheep or one in any group of animals where many are grouped together.

The very fact that you have acquired the title of overseer or superintendent stamps you as a leader, a capitalist in your line.

THE MAKING-*OVER* OF

A MAN

IS THE GREATEST ACCOMPLISHMENT

IN THE WORLD

But have you stopped where you are? Or are you making a study of yourself to find ways to become a greater leader?

What are your faults, anyway? You know them all right, without OLD TIMER having to enumerate them to you. The point is, have you the backbone, the will-power to even reduce the number of these faults?

Say, how about making a start by selecting one of those faults that you know is the cause of your not getting along with your associates better, the fault that some time or other has caused you to have to change jobs, whether you were asked to resign, or whether you just quit in a fit of temper like a fool.

Honest-to-goodness now, just what do the other overseers think of you? Oh, heck, now don't lie to yourself by saying you don't know. Because if you have common sense enough to have become an overseer, you have common sense enough to know just about what your brother overseers think of you, what your neighbors think of you, what your operatives think of you.

And how about the boss? How many things can you think of that you know did not set well with him? And were you right or was he right? Have you really tried to honestly see his side of it? Have you reasoned to yourself just what you would have done, how you would have felt toward him, if you had been the boss?

Come on, now, and let's have a show-down with you and yourself.

Don't try to correct all these faults at one time. *Impossible.* You did not acquire all of them in one day, neither can you overcome them in one day.

Suppose, after you have decided which one is the worst, the one that has really cost you the most dollars, either in holding you back from promotion or whatever it was, or whether you can actually express it in dollars and cents or not (and OLD TIMER knows you could if you really wanted to)—

Well, go at it the other way and simply write down the dollars that darn fault has made for you. How many friends has it really made? How much real pleasure have you gotten out of it?

No, you are ashamed of it, aren't you? You just won't admit it to yourself, will you? Come on out of it, old pal. You are the only person in the world who can really make yourself over, make yourself a new man, and gosh, how proud you will be if you will only listen to an OLD TIMER'S pleadings and make up your mind that you are going to do it.

Guess you think it's a lot of fun or something for me to be pleading with you like this. Well, you should really be able to take a look-in at this moment. Here I sit in my B. V. D.'s with the sweat pouring off like a gentle rain. The papers said today was the hottest day in this section in thirty years.

Oh, yes, I could be sitting out on the porch smoking my old corn cob and dreaming or sitting in a cool picture show or enjoying myself like many of you who read this are doing this very night.

I am not complaining at all, I am merely trying to get you to see that I am really and honestly interested in my brother overseers and superintendents and willing to prove it by putting forth this effort.

Just read that little verse at the top of the OLD TIMER page and you will get a little insight as to why OLD TIMER is interested in you. The biggest kick I get out of life is when I turn out a good young overseer or superintendent and see him make good. Many that I have turned out have probably practically forgotten the interest that was taken in them, and some actually feel sore on account of some calling down that was given to them for their own good, or something that had to be done to teach them a lesson. Today I pointed out to a friend of mine (a traveling salesman) two overseers who were practically raised at the mill where they are. Only two years ago they could not do the mill calculations necessary to run an overseer's job. Today they are both overseers and teaching night school.

And if I get a lot of pleasure out of seeing some young fellow go out and make a success, I will get a lot of pleasure out of seeing you make one of the greatest successes a human being can make, and that is get you to *know yourself.*

Go back and read it again. Above all, be honest with yourself. Think it over tonight after you retire.

Now, which one of those faults are you going to start on?

Momentum

MOMENTUM means mass speed ahead. In business it depends on a nice balance of quantity in production and velocity in sales. How *much*—how *quick*. Reduce either of these factors, put one out of balance with the other, and momentum is lost.

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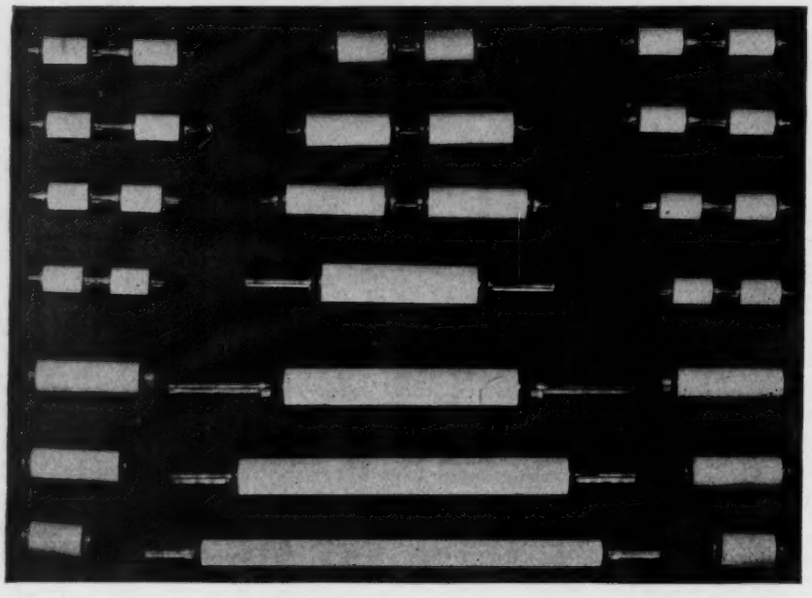

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How Can He Get Cleaner Laps?

Without any opening machinery, how can this man improve the quality of his picker laps?

EDITOR COTTON:

I would like to apply to your readers for some suggestions as to how we may secure cleaner picker laps for our cards, at the same time making them with less lumps in them.

We run 1 3/16-inch cotton. We do not have any opening equipment. The bales are mixed ten at one time, by hand, and aged in bins for about one week.

We have three processes of pickers, 1900 model. The first or breaker picker has two beaters, a spiked or porcupine type, and a two-blade beater. The fan speeds on the breaker are, first, 1,150 r.p.m., and, second, 1,050 r.p.m. The intermediate machine has a two-blade beater, and a fan speed of 1,150 r.p.m. The beater in the finisher is a Kirschner or carding type, and the fan speed is 1,000 r.p.m. Our production is about 6,000 pounds a week.

As indicated, we want cleaner laps than we are getting, with less lumps, and I should appreciate any suggestions which your readers may offer.

CONTRIBUTOR NO. 4838.

Causes of Hard Ends on Intermediates.

EDITOR COTTON:

I note the question of "CONTRIBUTOR NO. 4726" in the May issue with regard to hard ends on intermediates. He gave the following information about his conditions, which I am repeating for the sake of convenience:

"I am running 15/16-inch cotton and have my steel rollers set 1 1/16-inch. This is on a 10 x 5 frame with ball bearing front roller and solid middle and back. I am making a 1.16-hank roving on these machines, out of .50-hank slubber roving. The slubber roving looks good and we do not have hard ends when putting up ends on slubbers. The weight on the front shell roller is 16 pounds, and 18 pounds on the back and middle rollers. The break draft between the back and middle rollers is 1.067. The amount of twist in the slubber roving is .8477. We oil the rollers on Monday, Wednesday and Friday."

In answering this question, to begin with I should say that this man has a rather short draft. The twist he gives is good provided he has no fibers at any time longer than 15/16-inch.

It often happens, however, that a sprinkling of longer fibers will be found in one or more bales, and when this condition develops, it causes a hard twisted slubber roving which refuses to be drawn on the intermediate with the roll setting which he gives. Also, we sometimes have a slubber tender who will put "brakes" on a front top roll when the bobbin has become too small, by inserting a wad of cotton under the clearer flannel to cause pressure on the top roll. This makes a heavier roving and sometimes draws badly on the intermediates.

Badly worn middle top rolls will cause hard ends, and if the material with which the top roll is covered does not "cushion" firmly, the slubber roving will not draw.

I believe, in this particular case, that I would try an increase of at least 1/32-inch on the roll setting, an increase of 10 to 12 per cent on the total draft by using a .45-hank slubber roving and reducing the twist in the slubber roving to say .76 in the .45-hank roving. I would increase the break draft say one tooth and look closely after the length of the staple and the character of the cotton being used, and if the top middle rolls show a tendency to groove easily, I would change to a firm cover and see that the roving traverse maintains the proper length of stroke. The character of the cotton plays a very important part in the running of the work and with proper settings of the machines, we need have few difficulties of this nature.

I should say that this man's weights—16 pounds on the front and 18 pounds on the back and middle—are correct. I presume that his ball bearing front top rolls are in good condition. Worn or broken balls on the slubber will cause a heavy roving, and a hard end may result on intermediates. When a finished drawing sliver becomes heavier than it should be, it will of course produce a heavy slubber roving which will often result in hard ends.

In conclusion, I would say that in the past I have had a number of experiences with hard ends on fly frames and spinning. This trouble can be readily overcome, but requires considerable readjustment at times, one of the most important of which is twist. As a rule, we are inclined to adhere to the catalogue twist tables, but it must be borne in mind that these tables do not account for all the various classes of stock, and so we must use our best judgment in using

We invite our readers to make use of this department for the discussion of any and all problems arising in the mill or the finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

a twist that will give the best results.

CONTRIBUTOR NO. 4774.

EDITOR COTTON:

I wish to present my ideas on the question of hard ends on intermediates, brought up by one of your contributors. This man said he has this difficulty worse during rainy and damp weather, although he gets some of it all the time. He continues, "I am running 15/16-inch cotton and have my steel rollers set 1 1/16-inch. This on a 10 x 5 frame with ball bearing front roller and solid middle and back. I am making a 1.16-hank roving on these machines, out of .50-hank slubber roving. The slubber roving looks good and we do not have hard ends when putting up ends on the slubbers. The weight on the front shell roller is 16 pounds, and 18 pounds on the back and middle rollers. The break draft between the back and middle rolls is 1.067. The amount of twist in the slubber roving is .847. We oil the rollers on Monday, Wednesday and Friday."

My first opinion is that he has four teeth too much twist in his roving, as he is putting in .847 turns, which is .0119 turns per times the square root, and it should be .778 turns or .0110 turns times the square root. This man is putting in as much twist on .50-hank roving as should be put in on .70-hank.

Of course the hard ends will show up worse in damp weather, because cotton is much harder to draw when it is wet than when it is dry, and he has solid rolls in the middle and back, and on that heavy work, solid rolls will channel very badly, with too much twist, unless he could run them on the front until they become worn and packed hard, and then put them in the middle and from the middle to the back. As he has ball bearing front rolls, he cannot pack them by running them in front, so he has to put in new rollers on the roving just as it comes off of the bobbin, and with the twist he is using, it will channel a new roll in two hours, and that will constantly let the roving slip enough to cause hard ends, very often, where there had been no ends put up on the slubber.

So I would suggest less twist in the roving, so that it would be softer and be held flatter on the roller. Then I think he would find less channeling of the rollers, and less slipping of the roving, and this would tend to stop the hard ends.

W. D. (N. C.)

EDITOR COTTON:

I note that "CONTRIBUTOR NO. 4726" has submitted a problem with reference to hard ends on intermediates. He stated that he is running 15/16-inch cotton, and has his steel rollers set 1 1/16-inch. He said he makes a 1.16-hank roving, out of .50-hank slubber roving; that the weight on his front shell roller is 16 pounds, and 18 pounds on the back and middle rollers. The break draft between the back and middle rolls is 1.067, and he puts .847 twist in the slubber roving, and oils his rollers on Monday, Wednesday and Friday.

I would suggest that he set his back and middle rollers to 1¾-inch, and let the front to middle roll settings stay at 1 1/16-inch, making certain that the rolls do not rub. I would put about a 20-pound weight on the rolls, as I believe this would help, and I would also suggest that he oil the back rolls every day.

I hope these suggestions will be of some benefit to this man.

P. W. (GA.)

In Reply to the Article "It" by "Old-Timer."

"Old-Timer" started lots of people to thinking, and this man has given us his ideas. What are yours?

EDITOR COTTON:

In regard to "OLD TIMER'S" article "It," which appeared in the January issue of COTTON, I take it for granted that the term can mean any one or all of the following characteristics:

A man's personality; that magnetic power to make friends quickly; the ability to make people look upon you as a leader of men; and applied to business, "It" is that desirable quality possessed by men with the necessary qualifications to make good overseers and superintendents.

"OLD-TIMER" seems to feel that only a few people are possessed with this desirable feature. However, I believe that anyone can develop this "It" if he or she wants to do so.

Now, every man in a cotton mill who has charge of a body of people, from the superintendents down to the section men, if he makes a success, must first learn to make his help like him. To this some of my readers may ask the question, "How?" I would say by holding yourself a little above the average; by treating everyone alike; by living up to every promise; and by speaking to everyone with a smile. Now, to explain where the "It" comes in.

The superintendent has charge of all help. He looks to the overseers to carry out his plans, and if he has the habit of speaking to these men with a smile, I am willing to gamble that they will go to extremes to see that his orders are carried out—they would even fight for him.

The same is true with the overseers, second hands and section men. That is, as long as they always greet their help with a smile, they will always have their hearty co-operation.

Then too, by speaking to everybody with a smile, if you do not know them or they do not know you, you will cause them to want to find out who you are, thus making many new friends.

Some might wonder if I expect a superintendent in a mill to stop a sweeper and speak to him in order to make friends with this sweeper. No, I do not expect him to do this, but if he will speak on his rounds and go ahead, the sweeper will hold him in much higher esteem.

The superintendent has the overseers, the overseers have the second hands and the second hands have the help to aid in the development of this "It."

I'll wager that the friend of "OLD-TIMER" who possesses so much of this "It" meets everyone with a smile. That smile is what constitutes "It." Am I not right, "OLD-TIMER"?

CONTRIBUTOR NO. 4701.

Causes of Worn Spinning Rings.

There is room for a variety of opinion on this subject, and we invite you to submit your views.

EDITOR COTTON:

In answer to the question of "T. A. D. (GA.)" in the March, 1930, issue of COTTON, page 563, "If the spinning rings become worn, does this have a tendency to weaken the yarn?" I would suggest that he mention counts, size and flange of ring, spindle speed, traveler size and circle. However, I am suggestiong some ideas as to rings, their care and upkeep, which I hope will be of help to him.

In answer to the first part of his question. It is my opinion that worn rings do weaken yarn to some extent. If you watch a traveler running on a worn ring you will notice that it vibrates to a great extent. This vibration will give the yarn an uneven twist, which in turn will weaken the yarn.

It does not pay to use too large a ring on any count of yarn, as, the larger the ring the finer the traveler, and a fine traveler will wear a ring much faster than a heavy one. The reason for this is that the light traveler heats the ring and draws its temper so that the ring loses its condition.

If the ring size is right, it may be that he is running too large a circle. I may also mention here that if a ring is broken in with a certain circle it should be run with the same circle throughout the life of the ring. And also, that the circle should not be any smaller or larger than necessary to get the best results for the yarn wanted. If the circle is changed, the traveler will be forced to wear a new track in the ring, and after being changed a few times the traveler jumps from one track to another. In a short time this will lead to wavy rings. A wavy ring is also caused by leaving the traveler on the ring too long a time without changing, as the points get sharp and dig into the ring when starting the frame.

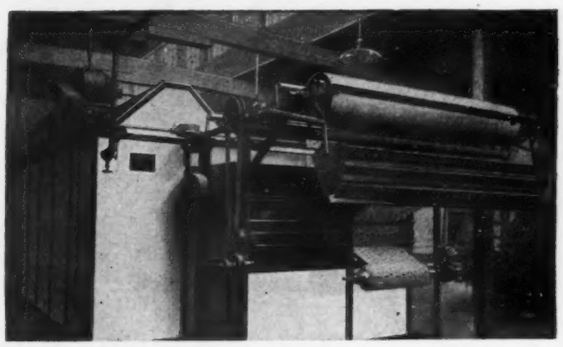
As for replacing the old rings with new ones, he is only increasing his troubles, as new rings require lighter travelers than do old ones; so by changing a ring here and there it will result in different tensions on the yarn, and, naturally, different sized bobbins will appear.

To get the best results in spinning, I find that a traveler should be run as heavy as possible without getting excessive end breakage.

To get the best results in changing rings, I suggest that "T. A. D." take the rings out of one frame—taking one frame at a time—and replace the old rings with the new ones, using the old rings wherever needed on the other frames. This method will do away with the different sized bobbins and the variety of tensions.

To get the best result from new rings they should be broken in properly. I have used the following method with good success:

Before putting the rings in the frame clean with either kerosene or gasoline, and wipe dry. After running for five hours stop the frame with the rail at its highest point and break off travelers; remove the bobbins from the spindle and place on thread-board without breaking down the ends. Next, wipe the inside of the ring with a soft cloth, being sure to wipe under the



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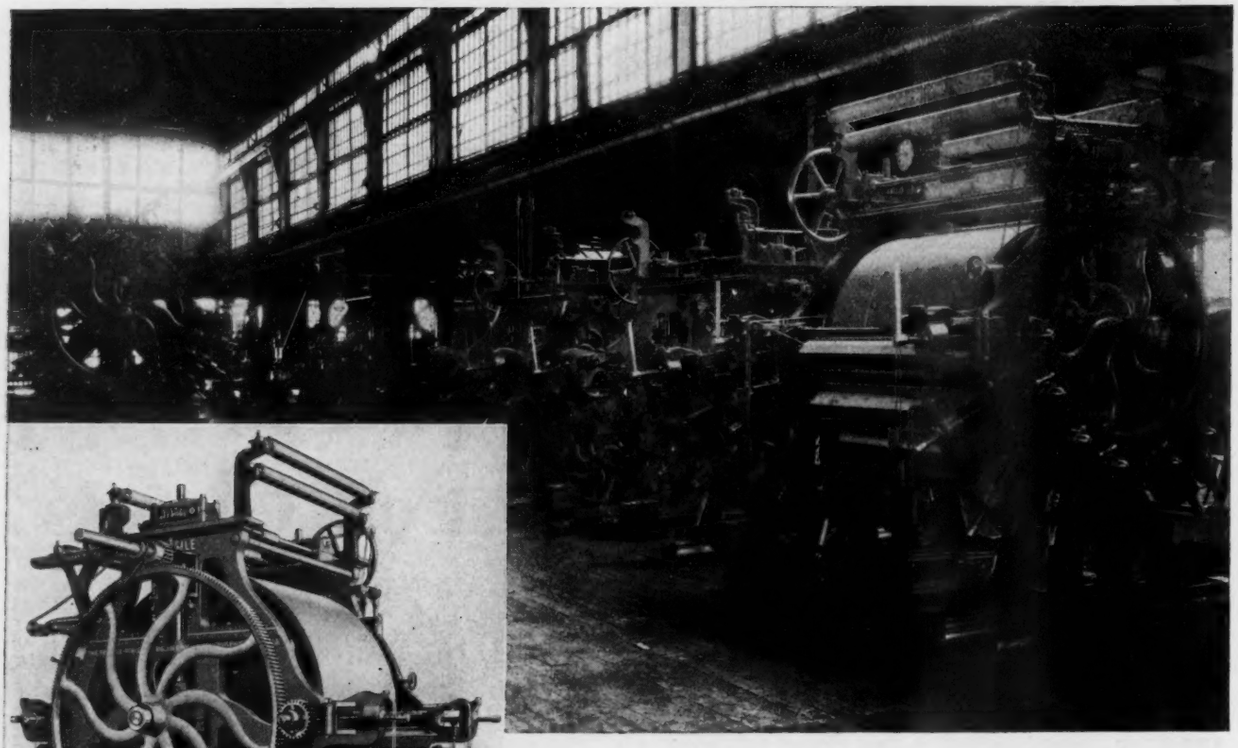
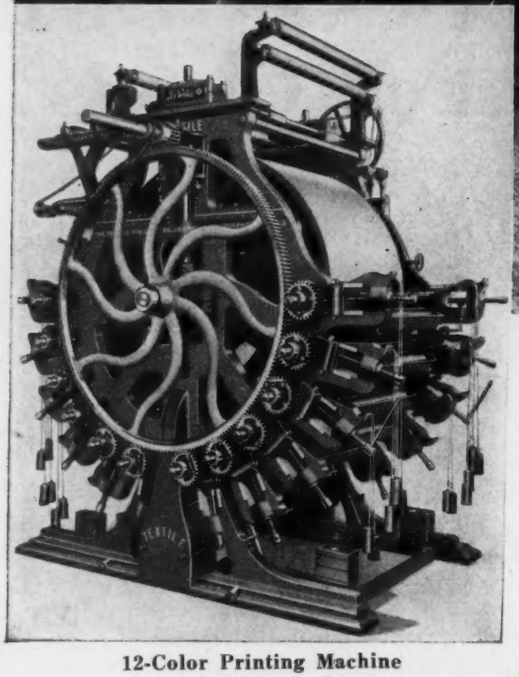
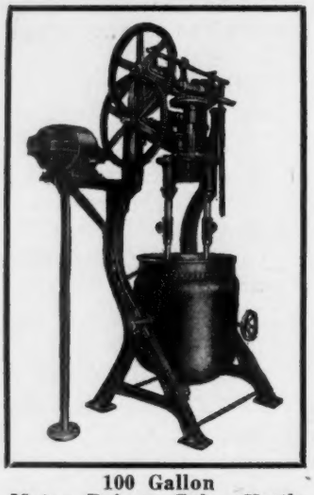




12-Color Printing Machine



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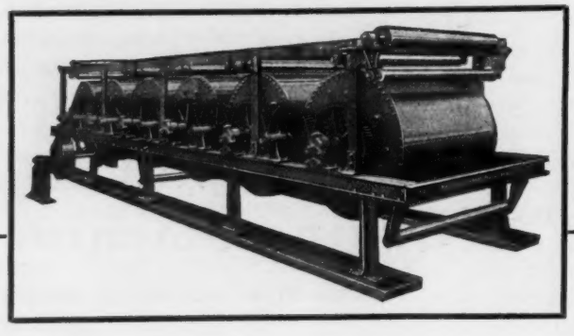

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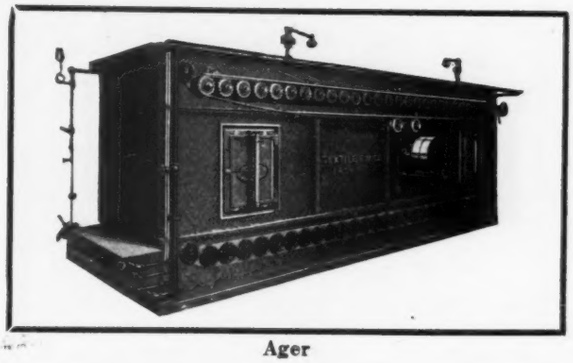

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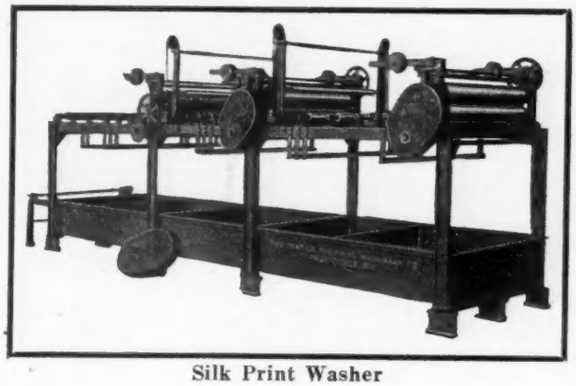

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top flange thoroughly. Repeat this process every ten hours for about two weeks, and at the end of that time clean once a week for one month, and at that time the rings should be properly broken in. I find it a good policy to keep this cleaning up, say one frame per week, this being done by a capable and reliable section hand, as it adds to the life of the ring.

If "T. A. D." is using double rings he could use them a good many months longer by turning them over and proceeding as with new rings.

D. M. C. (MASS.)

EDITOR COTTON:

I recently noticed where "T. A. D. (GA.)" wanted to know whether or not worn spinning rings will weaken the yarn.

I am of the opinion that they will, for a worn ring will cause a harder traveler pull and this slows down the speed of the traveler. A slow speeded traveler will not put in the correct twist and will also stretch the yarn, which takes the elasticity from the yarn. This gives a dead yarn that will give trouble in the spooling, warping, slashing and weaving, as the yarn will not stand as much tension as it is necessary for the strands to have while going through these machines.

CONTRIBUTOR NO. 4748.

Preventing Good Cotton Going to Dust Room.

EDITOR COTTON:

In the discussion department of the March issue of COTTON we were invited to offer suggestions to "H. F. (N. C.)" to help him to overcome the loss of good cotton through a condenser into the dust room. I am taking it for granted that the condenser is an old type, and my suggestions which follow will be based upon this belief. As we are using one of these old type condensers, and also as we have had the same trouble as "H. F." reports, perhaps he will be helped somewhat if he adheres to these suggestions.

First, he will understand that when a condenser is operating there must be a perfect suction in it, and this state of affairs must be in existence before any condenser can prevent good stock from passing the fan and on to the dust room.

To secure a proper suction the dampers, both inside and outside, must be set so as to prevent air leakage, or a back draft, and also the leather packing around the casing of the condenser should be perfectly airtight. The new type of condenser does not possess any leather packing, but is encased with a fireproof casing which is also air-proof.

I think without going further our friend will find that air leakage is the cause of his trouble, because when a perfect suction against the outer damper does not exist, the stock which rolls on the outer sides of the condenser is easily sucked away through the air pipes on either side of the condenser and thence to the dust room. I would advise "H. F." to examine everything for air leakage and he will undoubtedly overcome the trouble.

D. E. (R. I.)

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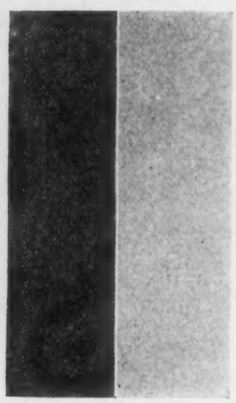

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You know how poor lighting would retard production and pile up seconds this fall. Now is the time to prevent it . . . . before orders demand every minute of your attention. You can hold Factory Film in check with Du-Lite. This product is a mill white developed and tested by du Pont chemists, who are among the first to study this light-absorbing film and its effects on your production.

Du-Lite protects your walls with a tile-smooth surface. It resists the formation of Factory Film. Presents no tiny pores and pockets where dirt can gain a footing. It makes your walls reflect 94% of the light that strikes them. And it holds this whiteness longer than an ordinary mill white.

Du-Lite is easy to apply—so easy that it will cut 35% from the cost of labor. It covers 25% more area than an equal quantity of an ordinary mill white.

You can get Du-Lite in Flat, Eggshell, or Gloss Finish besides a specially prepared, flat-drying undercoater. You can tint it to any desired shade and apply it to wood, brick, plaster, concrete or metal. You can wash it frequently without injury to its tile-smooth surface.

Don't wait until rush orders swamp your mill. End Factory Film now. If you would like to try Du-Lite's resistance to this thief of mill profits, send for the free test gallon. Write E. I. du Pont de Nemours & Co., Inc., Dept. C823, 1616 Walnut St., Philadelphia; 2100 Elston Ave., Chicago; Everette Station No. 49, Boston; 351 California St., San Francisco.

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Which Way Should Leather Top Rolls Be Put In?

Maybe here is something you had not given much thought. What do you think about it? Let us hear from you.

EDITOR COTTON:

As far as I remember I have never seen the following question discussed in your "HOW OTHER MEN MANAGE" department, and I think it is a question which should be brought to the attention of those mill men who are interested in the fine points of economical management.

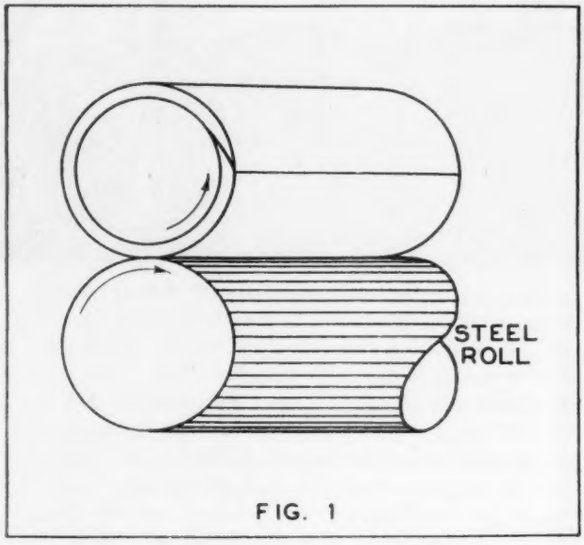


FIG. 1

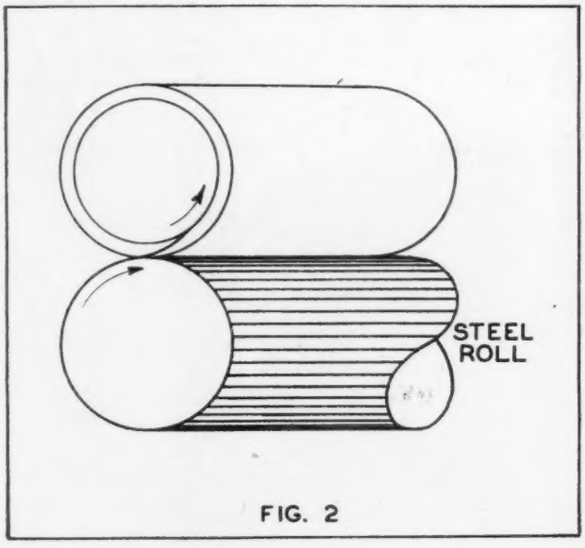
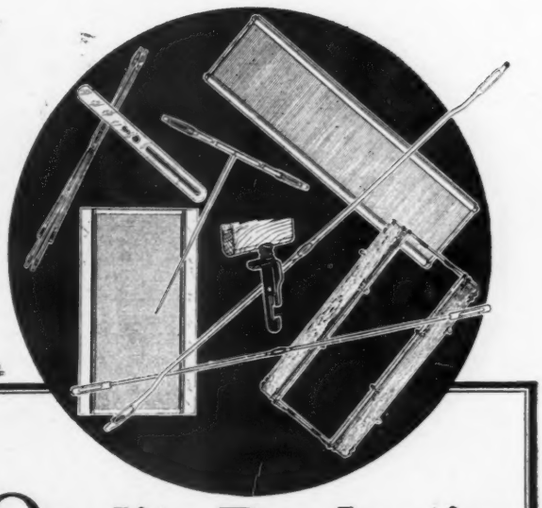


FIG. 2

Here is the question: Which way should leather top rolls be put in the spinning frame, with the point, or overlapping of the lap, pointing toward the front or toward the back when the lap is on top?

I think the general practice of roller coverers is to put a dot on the roll in front of the point of the lap, and most section men (all as far as I know) put this dot to the front when putting rolls in the frame.



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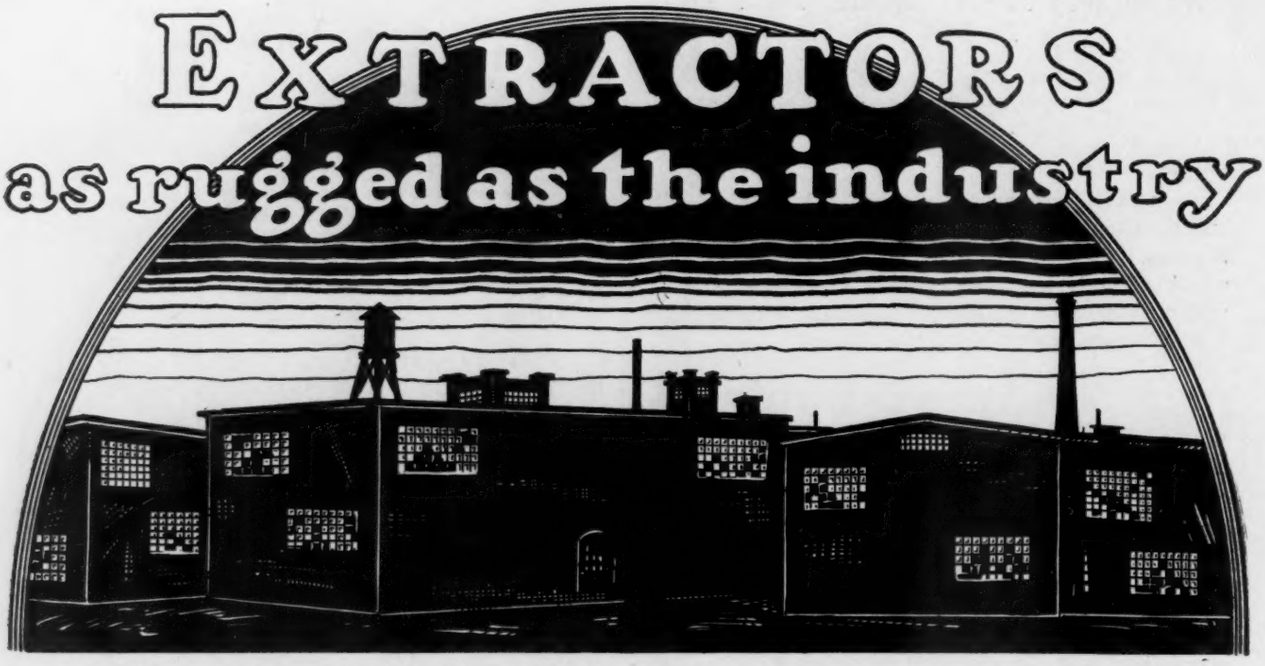

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The roll then turns away from the point of the lap, which seems to be the logical and proper way. In a recent discussion of the question the fact was brought out that the steel roller drives the top leather roll and hence is continually tending to separate the lap when the rolls are put in the frame in this manner.

Fig. 1 shows the customary way of putting in the rolls, while Fig. 2 shows the direction of the steel roll and the continual tendency to raise the point of the lap, since the steel roll drives the top roll.

Are we putting our top rolls in backwards? I hope this will raise a lively discussion in this department and that we all will learn something new.

L. W. N. (N. C.)

A Barrage of Comments.

The man who wrote this saved up his ideas over a period of several months, and then comments on a number of different subjects.

EDITOR COTTON:

It seems that I like to remain dormant for quite awhile, and then all at once burst forth with a barrage of comments. Well I am running true to form, for here I come again with a deluge of opinions concerning different articles that I have recently read.

I found the article "At Thomaston, Regardless of the Job, We Pay for Accomplishment," by A. E. Massey, which appeared in the May, 1929, issue, very interesting. The system at Thomaston is quite a departure from the practice adopted by most mills.

It has always been my contention that the operative is always willing to give his best when a fair and just proposition is made him. First of all, as Mr. Massey has done, the mill management must gain the confidence of the operative, and this is best done by practicing the "Golden Rule." It is a peculiar trait in many a man, that the minute he secures a higher position he considers the people working for him as made from a different clay and that they must be trodden upon before they can be made to realize who is boss. It must be a very unpleasant life he leads when he is afraid someone beneath him will try to speak to him, especially in public. I have known some of these men before they received their higher positions and invariably they were the greatest agitators in stirring up trouble between the operatives and management. I have had dealings with operatives as operative and overseer, and, as an operative, learned that the operatives do their best work after a little pat on the back or a word of encouragement. Therefore, as an overseer, I profited by my experience as an operative in dealing with my help.

The help under Mr. Massey must be producing as close to 100 per cent efficiency as is possible for human beings to deliver. Just think of the contentment of this class of help while at work and of the happy feeling they create when they enter their homes after working hours. This latter feeling, to my mind, is one of the greatest contributing factors to efficiency. Regardless of how good the management may be, if the home life of the operatives is not what it should be, they will not be able to give their best to their

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Outstanding textile mills regularly use NON-FLUID OIL because of its lubricating quality—extreme adhesiveness—and the resulting greater cleanliness and economy.

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work. I believe the younger generation is learning the value of accomplishment, as advocated by Mr. Massey, and that in the future we will have more of it in our mills.

A great many mills have had engineers to study their plants, make their reports, and then allow them to leave. The management would then, without understanding the system of the engineers, try to install it in their mills. As a result they met with disaster, and the engineers unjustly received the blame for the loss in money and time. However, I believe it impossible for engineers or anyone else to install any new suggestions or ideas in a plant unless they really know the help, as well as the machinery.

Mr. Massey showed great common sense in studying the reports and his help together, and then rearranging his schedules to suit the occasion. He also used good judgment in putting them into effect very slowly, allowing one thing to be thoroughly started and producing before going on to the next. Such a method will always succeed, and should.

The "Comeling" Article.

I read a second time the article by the late Mr. Oliver G. Murphy, which appeared in the May, 1929, issue. This was the second informal conversation which Mr. Murphy had reported between himself and his Comeling, and I found it very uplifting and inspiring. If some of our ministers would only read this they would certainly get some very good thoughts to give their people. As pointed out by Mr. Murphy, swearing at help never helps anyone. It leaves a sore feeling, retards efficiency and promotes friction that otherwise might not exist.

Middle Roll Weighting.

On page 919 of the June issue "CONTRIBUTOR NO. 45711" asked for information relative to improving end breakage and increasing the life of the leather rolls, using a self-weighted middle roll. He stated that the middle roll is the regular one turned down. I believe that his trouble is right there. He said that on his 8s he has a weight of 3½ pounds on his middle roll. I do not believe that is heavy enough for such coarse counts. I would advise experimenting with heavier middle rolls, for I also believe that ⅞-inch stock is too short for this type of roll. He will get better results by using three weighted rolls. It seems to me that his speed of 180 r.p.m. for his front roll would give him an unusually large end breakage.

Humidity in Picker Room.

I am thoroughly in accord with the statement made by "CONTRIBUTOR NO. 14" in his article on humidity in the picker room, appearing in the July, 1929, issue, that six to eight per cent is about as damp as cotton should be in order to clean it properly. I have found by numerous tests that unless the percentage is eight per cent or under great difficulty is experienced in cleaning.

Some years ago I saw a system that I thought very good. It has not been accepted by the trade because of the high cost of installation, but where it has been tried it has proven very satisfactory. The object of the system is to extract all moisture from the cotton, getting it as near bone dry as possible, then putting it through the opening and cleaning machinery, and, at the time of re-baling it, or putting it in bins for use, putting eight per cent moisture back in the cotton. This cotton was then very clean and the pickers and cards had very little of this work to do, thus allowing the beaters on the pickers and the card wire to keep their edge much longer. This naturally caused the machines to produce better work. I do believe that the keeping of weights in the picker room according to the humidity is the ideal way. By keeping humidity out of the picker room I believe it is possible to have cleaner cotton for the cards.

Taking Care of Humidifiers.

"CONTRIBUTOR NO. 14" went ahead in his article to tell of the importance of the proper upkeep of the humidifying system after it is installed. Too much cannot be said about this, for it is very generally neglected. A great many men seem to think that when the system has been installed that it will take care of itself from then on. They never inspect it as they should. If the rooms were absolutely dust-proof this system, after being properly installed, would require very little attention, but such a condition is impossible in cotton mills and dust will soon cause some part to fail to function as it should. I know that the best results can be obtained by having one man placed in charge of all humidifiers and making him responsible. Past experience has taught me that when more than one are placed in charge of the system, there is a tendency for each one to pass on to some other various duties that he himself should perform. As a result, no one does the work, and the system is condemned.

I also agree with "CONTRIBUTOR NO. 14" in regard to humidifying the spooling and warping departments with automatic controls. I was always taught to check my numbers by the weight of the warper beams and when humidity and weights are kept correct here we will have less variation in the yards per pound of our finished cloth.

"CONTRIBUTOR NO. 4558" in his article, "Duties of an Overseer," in the July number, tells of something that should never exist—a superintendent being afraid of his overseers. Any overseer who threatens to leave if he canont have his way, which may not be for the best interests of the concern for which he is working, should be fired on the spot. There never has been and never will be a mill shut down because an overseer leaves. Often a new overseer will prove an asset to the mill.

"CONTRIBUTOR NO. 4568" on page 1161 of the August issue has given us a good layout for 70s yarn in answer to "CONTRIBUTOR NO. 4101." The arrangement of progressive drafts will give a much more even yarn and a better break.

Training Help.

There is a great deal of good logic in the article by "L. H. (N. C.)" on training help, which appeared in the August, 1929, number. He tells us of the futility of putting new help on without being sure that

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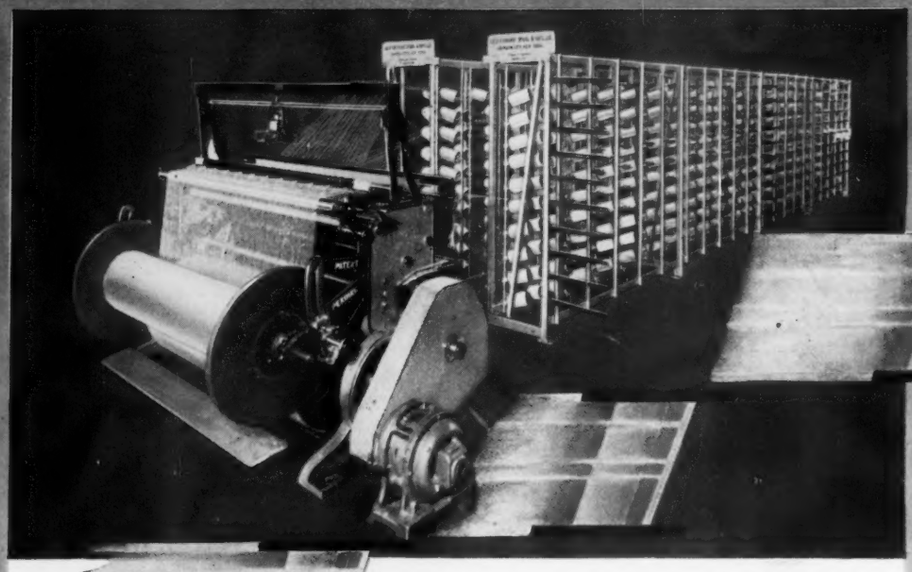

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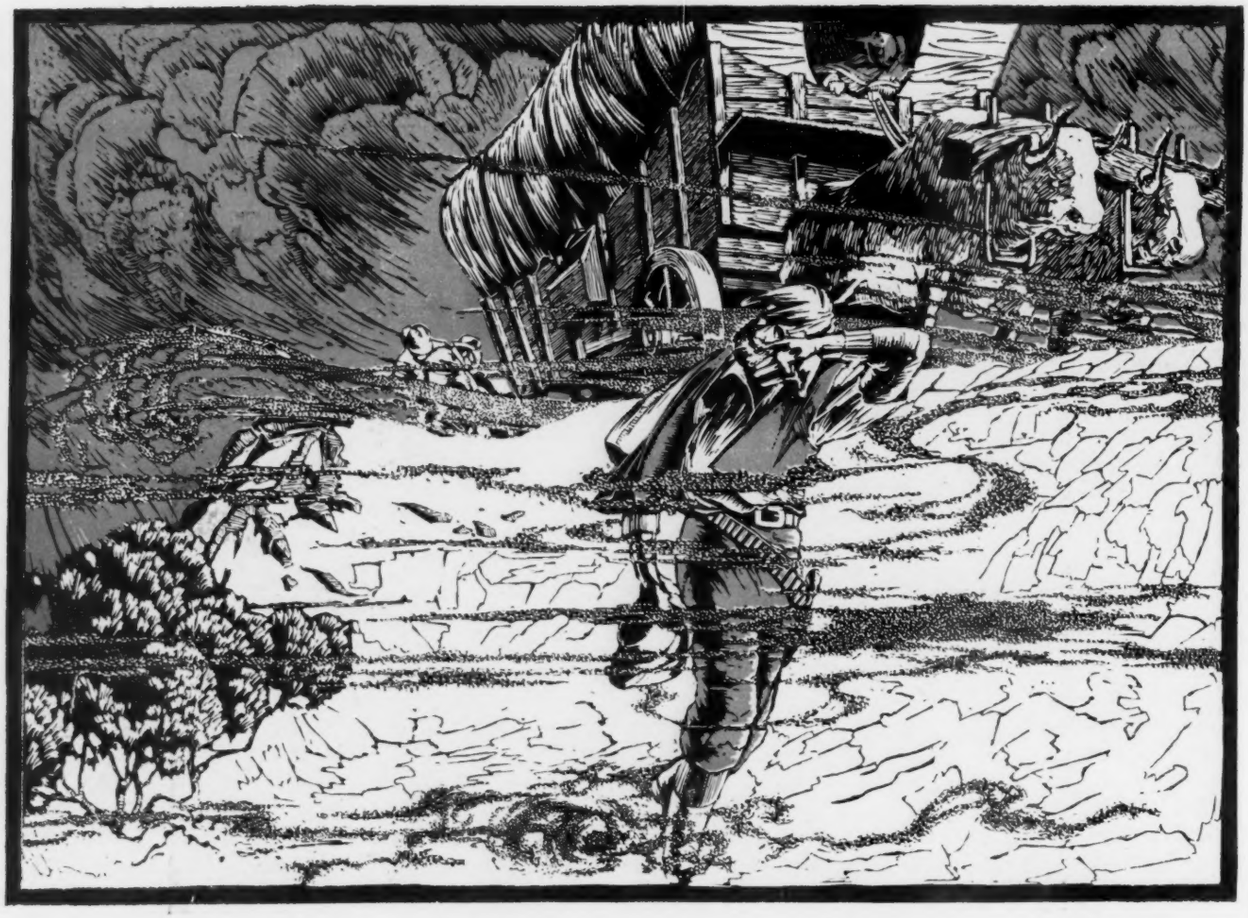

EARLY AMERICAN PIONEERS

A GREAT nation is today a monument to the endurance and dauntless courage of American pioneers who braved the dangers of a wilderness, savages, wild animals, sickness, starvation, severe cold . . . depending solely on their rifles for protection and on their own efforts for food. Often there was nothing to eat in a whole settlement. Many died of starvation, exposure and Indian outrages. Without roads or trails, the pioneers crossed swamps, plains, rivers and high, rugged mountains . . . on horseback and ox wagon! By their own toil they cleared the unbroken forests, erected their cabins, tilled the uncultivated soil, provided themselves with food and clothing . . . threatened with the ever-present menace of Indian massacres. Eventually they built schools, churches and cities, and founded the first democratic government!

Twentieth century civilization is a far cry from the pioneer life of hardships. Today, radios send the human voice to the ends of the earth. At astonishing speeds, steamships and aeroplanes cross oceans, and trains and automobiles traverse continents. Cities have their skyscrapers, talking moving pictures, electrical conveniences, telephones, telegraph and innumerable kinds of factories. These marvels are triumphs of the Machine Age.

Machinery has been the means of bringing the world into close touch, has largely eliminated drudgery and severe labor, has raised the standards of living, and has brought untold wealth to industry. The textile industry, especially, has been quick to realize the economy and efficiency of machines for mass production.

If your mill is still cleaning bobbins by hand, you are wasting time, labor and money.

The Termaco machine for cleaning roving bobbins has paid for itself in the average installation within twelve months. Its swift cleaning of thousands of bobbins a day saves labor and speeds up production by eliminating waits for bobbins. Staple is not cut and all waste is saved and used . . . without reworking. Bobbins are not split in cleaning, and last indefinitely.

The Utsman machines clean filling bobbins rapidly and efficiently . . . without split ends.

The Type K machine for cleaning both plain and automatic loom bobbins and certain kinds of warp bobbins will clean 60,000 a day.

Write for complete information about these remarkable machines and how they cut production costs. In writing, state whether you are interested in cleaning roving or filling bobbins, and if possible, send a sample of the particular bobbin you have in mind. If you are interested also in motor-driven machine, give full details, including voltage, phase and cycle of your current.

THE TERRELL MACHINE COMPANY, INCORPORATED
Charlotte, N. C.

(General Supply Co., Danielson, Conn., representatives for New England New York, New Jersey, Pennsylvania and Canada.)

they receive proper instructions as to the operation of the machines they are placed on. I know I was in the habit of putting a new hand on machines and letting the rest of the help teach him and it was very seldom that I received good results. One day one of my operatives, who could not speak a word of English, taught me (and I was supposed to know how to do this one particular thing better than anyone else in the mill) how to perform a certain operation much better and with much less effort than I had theretofore. From then on I had a new viewpoint, and I always made sure that new hands were taught the proper way to perform each operation about the machines on which they were placed. This policy will save time and money for the firm and make more contented help, which will reduce the labor turn-over no small amount.

"CONTRIBUTOR NO. 4605," in the September, 1929, issue, gives us a very interesting and enlightening article in telling of a superintendent's reminiscences. It is the superintendent that he pictured that will really get results. That is, one that is not afraid to be on friendly terms with the operatives and is ready to lend a helping hand when he feels they need it.

"Specialization."

On page 1289 of this same issue, "C. C. (TEXAS)," in his article on specialization, brought out the thought of men being put into executive positions because of family connection. This is very true of the past but I believe that there is now existing a tendency to draw away from this. Competition has become so keen that a mill must either have capable executives or fall by the wayside. Most mills now put in only men that they feel are trained for the particular positions in which they are placed.

As stated by "C. C.," I feel that we should drop the family stuff and look to colleges and textile schools for material of the future. These men, however, should receive thorough practical training before being placed in executive positions. The sooner we realize that the trained man is valuable, the sooner we will start to pay good dividends.

"The Value of New Equipment."

I believe Mr. Beede, of the Fales and Jenks Machine Co., has given mill men some food for thought in his article, "The Value of New Equipment," in the October, 1929, number. The average person after having a piece of furniture in his home for several years feels that it has paid for itself and is ready to discard it. This being true, why is it that the same person does not feel the same way about a piece of machinery in his mill, which by its production enabled him to buy the furniture? Why is it he can't realize that by changing it when necessary he will be able to better his quality of work and increase his production and dividends? Then he will be able to change furniture more often.

Too many mill men feel that once machinery is bought and installed it should run as long as it *lasts*, and do so at low costs. Very few other industries will try to plug along with antiquated machinery. Let us hope that more mill men will come to feel as Mr. Beede does.

Slubber Tensions.

In the November issue "V. T. (GA.)" asked about getting the proper tension on his slubbers. It has been found, especially on old slubbers, that the cones have slight mistakes in their lines and this cannot be corrected without changing cones. I remember having this trouble about 25 years ago on intermediates, and, as "V. T." said he had done, we checked up on everything and found all gears correct. Upon examining a little closer, we found that the cone belt seemed to be tighter as it neared the center of the cones. We put a slightly longer belt on and our trouble was over.

"Oiling Cotton."

The article by J. J. Brown in the November issue in answer to "WASH" on oiled cotton bears out what I have found in running tests on cotton with and without oil. There is only one way to test this out and that is by comparative tests, machine for machine, with observations and data recorded at every step. I have found that the spinning from oiled cotton ran much better than the spinning from stock that was not oiled. I have also found the end breakage to be much less with the oiled stock, and that it is possible to spin much finer counts from the same hank roving with less trouble. The breaking strength was about the same but the running through all processes was so much better that I decided that it was a paying proposition to use oil.

I have known some mills to install the oil spraying system and then take it out. After a little investigation I found that their main difficulty had been due to the fact that they entirely neglected the apparatus after it was installed.

It seems that some fear the oil will spoil the card clothing by causing the wire and foundation to become matted with oil. This may be so in some cases, but I believe that a little investigation will always reveal that it is due to some carelessness.

The great trouble with some mill men has been that, after finding the correct amount of oil to use, they would decide to add a little more, and of course they ran into trouble. Then, instead of blaming themselves, they blamed the oil. If they will follow the advice given by the manufacturers of the apparatus, which advice is based upon a great amount of study and experimenting, they will be greatly benefited.

CARDER (MASS.)

Who issues orders for supplies? Does he examine the old or broken piece to see if it has a good screw, a belt or an assembled piece which is not broken? The "kick" here is that supplies cost money—yes, any fool knows that—but just to satisfy yourself that you are no fool suppose we step down to the scrap pile and have a look.

It is better to "kick" than to be "kicked," but for goodness sake don't be a chronic "kicker."

Study successful superintendents. You will then stand a better chance to be one.

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You will be amazed at the simplicity and economy of our new development which extends Washburn Long Draft to the Carding Department.

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"Wash" Comments on Carding.

This regular contributor brings up card drafts again, and every reader is invited to express his opinion.

EDITOR COTTON:

I see in the March issue where "K. Y. (MASS.)" regrets very much that he was not a reader of COTTON when I fought the boys who advocated long-draft on cards.

In his short letter he states that he believes in a heavy lap and light sliver, and not in a light lap and heavy sliver. Now, in all of my articles, I have always advocated a light sheet of lap and a light sliver.

In the operation of a cotton card, there is one rule that holds good for all classes of work, which is: the more rapidly work can be turned out by the card, consistent with the quality or grade of work required, the stronger will be the yarn. Why was this rule adopted by the builders?

Let us assume that the draft and settings on a card are as perfect as can be, and that instead of allowing the strand to enter the coiler and can, we allow the web to drop to the floor. Let us again assume that we do this on all the cards. We now have on hand what we term waste. Now let us take this back to the picker room and make this waste into laps again and run these laps through the cards. I don't believe anyone could help but admit that the roving and yarn made from this waste would be very weak. It seems to me that this should prove that with perfect carding, running the stock through the card only once will make the stock fluffy and not fit to be run over again. The only way this waste could be run to advantage would be by mixing it with raw stock. Therefore, we must all admit that the fibers receive very severe treatment in going through the card, and that when cotton fibers are robbed of their waxy walls the cotton becomes waste.

Now let us picture a fringe of cotton hanging down over the feed plate and the licker-in teeth playing through it. The amount of severe treatment that the fibers will receive will be proportionate to the amount of time that the fibers are exposed to the action of the teeth of the licker-in. Then the heavier the lap and the lighter the sliver, the longer the period of time the fibers are exposed to the action of the licker-in teeth, which of course gives the licker-in ample time to rob the fibers of their waxy walls. That is why I believe in a light lap and light sliver.

I would also make my sheet of lap light due to the fact that it is much easier to extract foreign matter from a light bulk of cotton than from a heavy bulk.

With a heavy lap and light sliver, which calls for a draft of about 130 to 140 inches, I have seen, during the summer months, instances where most of the licker-in belts had to be tightened in order for the licker-in to do the great amount of work placed upon it. I have seen some cases where the work placed upon the licker-in was so heavy that the speed of the licker-in lagged continually behind that of the cylinder, which destroyed the relationship of the surface speed of the two, and this will always cause poor carding.

If "K. Y. (MASS.)" replies to this article I would

like for him to answer the following questions:

(1) From a point at the bite of the feed roll and feed plate to the coiler calender rolls, which fibers will receive the most severe treatment, the ones making the journey in a short period of time, or those requiring longer?

(2) Can foreign matter be extracted more easily from a light bulk of cotton than from a heavy one?

(3) Which gives the best gradual draft, a heavy or light sheet of lap and why?

(4) Does the length of the draft on the card affect the speed of the licker-in?

(5) Are short drafts better on the machine preceding and succeeding the card?

(6) If a heavy lap and light sliver will make a stronger roving and yarn, where does the source of the increased strength come from?

(7) In your actual experience, when you ("K. Y.") tested the merits of the short and long draft, was the stock run from the same bale of cotton?

WASH (R. I.)

Is He Making 3.60 or 4.00-yd. Goods?

EDITOR COTTON:

In the April issue of COTTON a letter appeared by "CONTRIBUTOR NO. 4706" in which he asked why it requires more time to weave a three-cut roll of cloth than to weave three one-cut rolls on the same kind of loom, and under the same conditions. I regret that I am unable to furnish the information he desires, as I can see no reason why this should be so. If, as he seems to believe, his weaver slights the loom with the three-cut roll, he could assure himself of this very easily by operating a set of looms for a week with day weavers. By this, I mean he should use one spare weaver on these looms today and another spare weaver tomorrow, etc. In this way all will know that they will not be paid for the cloth which comes off, but will receive spare weaver rates per hour.

However, the thing that put me to thinking and caused me to write this article was that he stated that he was making a 40-inch, 56/60, 3.60 yard goods with 21.50s warp and 26s filling. For the life of me, I don't see how he does it. I will appreciate it very much if "CONTRIBUTOR NO. 4706" will figure out this construction in COTTON.

Following may be seen my humble attempt whereby I arrive at the conclusion that he is running a 40-inch, 56/60, 4.00 yard goods instead of 3.60 yard goods:

$60 \times 41 = 2460$ inches of filling per inch of cloth.
2460 inches = 68 1/3 yards of filling per inch of cloth.
$68\ 1/3 \times 36 = 2460$ yds. of filling per yd. of cloth.
$2460 \div 840 = 2.98$ hanks per yd. of cloth.
2.928 hanks of 26s yarn weigh 1.8 oz.

$56 \times 41 + 32$ (selvages) = 2328 warp ends.
2328 yds. = 2.77 hanks of warp yarn per yard of cloth.
2.77 hanks of 21.50s yarn weigh 2.06 oz.
2.06 + 7 per cent (for size) = 2.2 oz.

$1.8 + 2.2 = 4$ oz. per yd., or 4.00 yards per pound.

We have made a 40-inch, 56/60, 3.60 yard piece of

It's all a matter of the way they're made

Rockweave baskets, trucks, and hampers can stand all the rough treatment you give them! That's a pretty strong statement. But we know how carefully, how scientifically these products are made. We know the quality of material used, the kind of men who do the work. That's why we're willing to recommend them even to the textile industry!

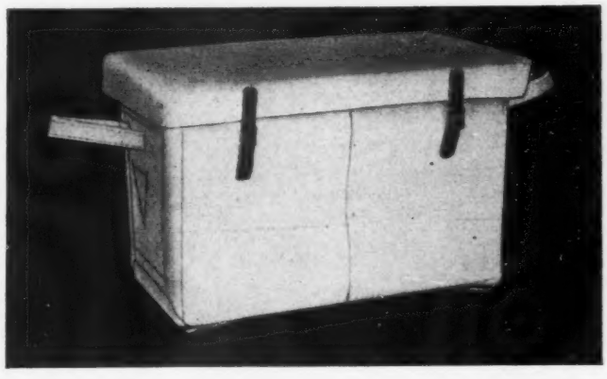
Look at the materials in these Rockweave products. Frames of highly tempered steel—reinforced against sagging, warping, or bending. Top rims heavily padded with chrome leather. Trucks of clear oak and maple. Casters, handles, eyelets and shoes especially designed for long service. And all coverings of Triumph Duck—an exceptional material, made right here in our own mill, and subjected to our own severe tests.

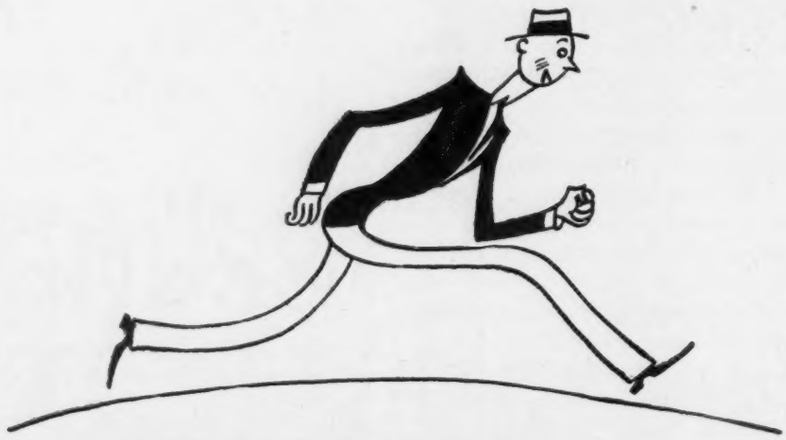
In spite of their superior construction, Rockweave products are priced right in line with the market. Whether your requirements call for special or standard sizes, we can fill all orders promptly. Address inquiries, and requests for a free booklet giving information on all Rockweave products, to

ROCKWEAVE MILLS

CANVAS PRODUCTS DIVISION DIVISION CALLAWAY MILLS

LAGRANGE, GEORGIA





WE TOOK A LONG STEP —PURPOSELY

WE sell rayon yarns and we sell only to mills, yet we advertise finished garments. Knitters and weavers are our customers, but we feature the names of cutters . . . picture their merchandise . . . in well over half of our advertising pages.

Some people have failed to see the reasoning behind this policy. "Why go so far from home . . . why not feature the mills that use your stuff?" they have asked.

We take a long step . . . over the mill, the converter and the selling agent . . . because we think it is the most economical way of getting business for everyone including our weavers and knitters. This is the way we figure:—

Through papers read by retailers, we tell the great stores of the country that a leading cutter is making smart garments of a fine Du Pont Rayon fabric.

Wide-awake cutters mail reprints of their pages . . . keep proofs in their showrooms . . . long after the published advertisements have been read and discarded.

It brings immediate sales in practically every case. Certain large cutters have admitted that our "third person sponsorship" brings direct results to a greater degree than their own advertising.

The converter or selling agent servicing that cutter gets repeat orders. Two fabrics featured in Du Pont Rayon advertising have been sold out. Deliveries have had to wait two and three weeks. That's pretty good in a year like this when textiles are talking sob stuff!

When converters sell futures, mills automatically get more yardage.

When mills get more yardage, Du Pont sells more rayon yarns.

If we stopped short of the cutter, we should stop short of doing a complete job. After all, someone must put a piece of cloth on his back, before a sale of Du Pont yarns has actually been completed!

DUPONT RAYON

REG. U.S. PAT. OFF.

DU PONT RAYON COMPANY . . . 2 PARK AVENU . . . . NEW YORK CITY

cloth, but we did not use the numbers of yarn mentioned by "CONTRIBUTOR No. 4706."

I hope your contributor will understand that I am open minded and serious, and always glad to be shown.

I appreciate the idea he advances relative to the use of an electric iron on turned down selvages, as this is one of my greatest problems.

P. R. C. (GA.)

Inspecting Ginghams.

EDITOR COTTON:

On page 789 of the May issue of COTTON you published some questions from "CONTRIBUTOR No. 4715" as to inspecting and grading gingham. I am going to give my ideas on the points he brings up, as a matter of interest to him and other readers.

This man says that he inspects his ginghams by pulling the goods over a small table by hand, and that he is considering the installation of a folder, folding the cloth and turning through it and inspecting it in this manner. The other questions he asked were: Do you inspect and grade the cloth before or after it passes through the tenter machine? Do you use folders before the cloth is inspected to prepare the cloth for this work? Do you finish the cloth as it is made or as you ship it out; in other words, do you store the cloth in the packing room in the finished state or unfinished state? What system of grading do you use for ginghams and other colored goods?

In answering his inquiries, I will say that his first process of inspecting, by pulling over a table by hand, is in my opinion the best, and cannot be improved upon, because in this method every inch of the cloth is seen by the inspector, when the cloth is not in motion or being wound up on the roll; the slubs and strings can be seen and removed better than in any other process with which I am familiar.

If the cloth were folded, only one side or half of the cut would be inspected, unless it were inspected on both sides.

I would first inspect as just described, as the cloth comes from the loom. Second, I would inspect and grade as the cloth comes from the folder after having been through the tenter and finished. This inspection will give a chance to find any oil spots or tenter drops, or any other imperfections in the finish. The goods are then in condition to be separated, firsts from seconds.

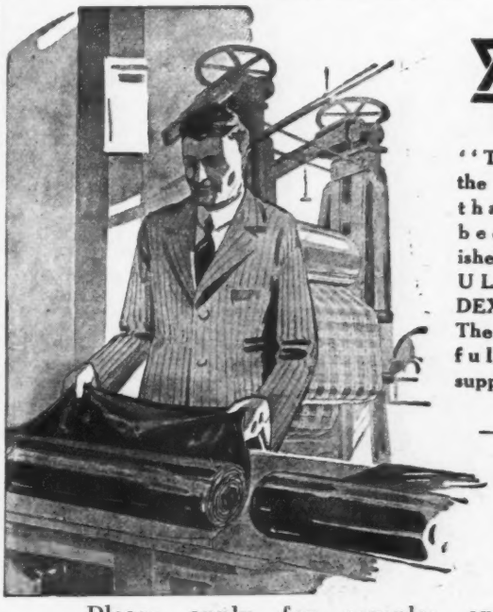
The finishing of the cloth as it is made up depends upon the trade. Some want a soft finish, while others desire a true firm hand or leathery feel; others a stiff or boardy finish. If the trade desires either one of these, then I would finish as it comes from the looms; the shipments would not be held up on the finishing.

The grading of all colored goods is done as the cloth comes from folder finished, and there are only two grades of cloth, firsts and seconds; remnants, 1s to 10s, 10s to 20s, 20s to 40s, full pieces.

I hope the foregoing will be of interest in connection with this question.

CONTRIBUTOR No. 4769.

ULTRA-DEXTRINE
for FINISHING



"This is the piece that has been finished with ULTRA-DEXTRINE. The feel is full and supple."

—o—

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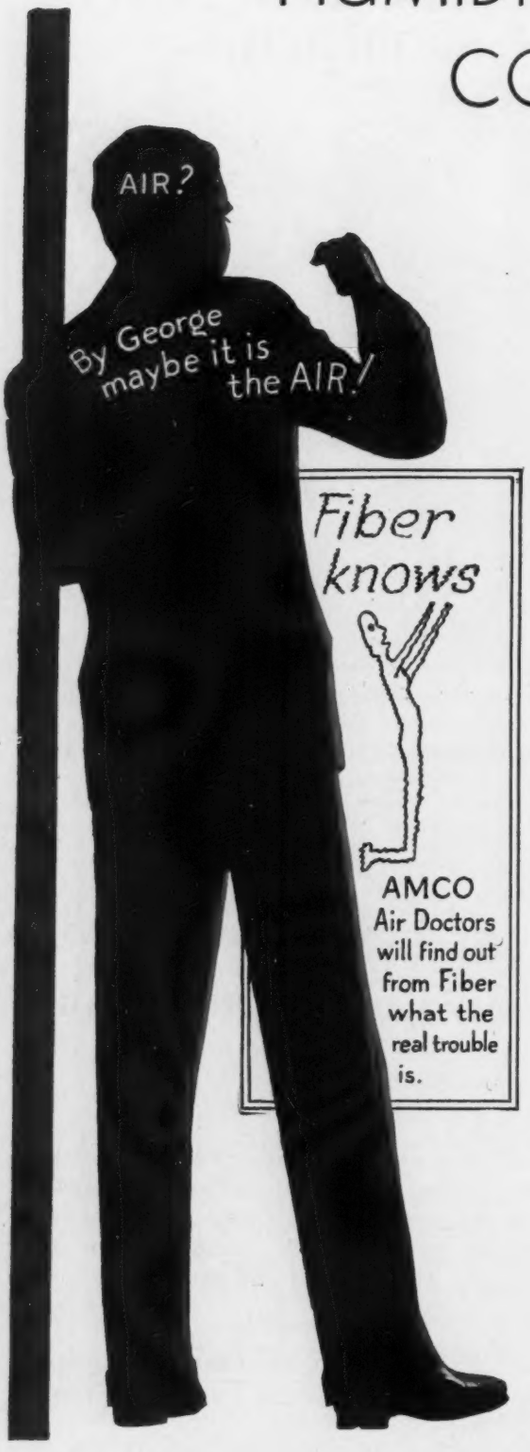

A NEW ENGLAND mill of 50,000 spindles, with looms to balance, called in the AMCO engineering sales staff. Our survey showed that 160 heads would meet their humidifying requirements.

The Mill Men were air-minded. They recognized the need for modern humidifying equipment but they were also hard-hearted business men.

"What", they asked, "will this system of 160 heads cost *to operate*?"

Operating costs only $1.29 an hour

For full, maximum capacity, which is seldom realized, we recommended two men at 40c an hour. The mechanical equipment included one 40 h. p. motor for driving the pump, 20 h. p. for the motors in the heads, and a two and one-half h. p. motor for the control compressor, or a total of 65 h. p.

At ¾ cents per horse-power-hour, the average rate in New England, power costs totaled 49 cents an hour when operating at full capacity. Plus 80c for labor, the operating costs per hour for this 50,000 spindle mill figure but $1.29.

Improved results in the finished product, with greatly reduced fly and improved sliver, also reduced inspection cost.

Get an air-doctor's survey

If you have trouble in the roving, the yarn, the weaving, the finished goods or the goods after shipment, our engineering staff of experienced air-doctors can show you how to eliminate the trouble and how to have a sweet-running plant ever after, with improved working conditions as a bonus.

AMCO humidity engineers make a written survey of your humidification needs, without cost or obligation. Write for case examples of their work.

This newly designed Amco Humidity Control automatically regulates and controls humidity in Textile and other mills without using wet or dry bulb actuated devices. Thousands in field service attest its splendid and satisfactory performance.

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EDITOR COTTON:

Responding to the questions of "CONTRIBUTOR No. 4715", I will give you in this letter a brief outline of what we consider is the best way to inspect and finish ginghams and other similar goods:

First, put the goods over an inspecting machine with cloth cradle, reverse motion and folding attachment to lay the goods off in loose folds on a cloth truck.

Second, the goods then to be carried to a stitcher and the pieces sewed together.

Third, the goods then to be put through the tenter machine.

Fourth, the goods are then to be calendered; and

Fifth, the goods are then to be put through folders, etc.

Replying to a specific question from him, we think goods should be inspected before being finished. With an inspecting machine it is unnecessary to put the cloth through folders before being finished, and the plan of first folding the cloth and turning through it to inspect it is rather slow and expensive.

Referring to his other question, we finish our cloth as it is made and then it is stored in the finished state.

CONTRIBUTOR No. 4722.

How to Prevent Loopy Filling.

The first of a number of interesting replies to this question. Others will be published in later issues. Send in your ideas.

EDITOR COTTON:

I noted the inquiry published from one of your contributors recently as to the cause of loopy filling across the face of a 5-harness warp-sateen.

I recently saw a sample of a difficulty of this kind and observed that the filling was rather uneven and full of thick and thin places, causing the twist to run unevenly in the yarn, which of course would result to an extent in this difficulty.

To anyone having this trouble there are a number of things which might be suggested. It is probable that the filling might be chopped up by incorrect roll setting, or that too long a draft was being used on the roving frames. Furthermore, it might be that too short a taper was being made on the filling bobbin, and that a sharper or longer taper was needed to prevent the filling from pulling off.

A chief cause of this difficulty would be a lack of proper friction or tension in the shuttle. On the sample I saw, this trouble did not show up on but one side of the cloth, and this is characteristic when the friction in the shuttle is insufficient.

Improperly set harness, resulting in an uneven shed, together with worn cams, could cause this difficulty. If double cams were used, it should be made certain that one does not shed sooner than the other. I would also suggest an examination of the whip rolls and breast beams, to see that they are in line with the harness, and also that the sand rollers be examined, to see if they are exerting an even pull on the goods.

B. W. (GA.)

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What About the Master Mechanic?

Here's a master mechanic who gives his ideas on what constitutes his job and responsibilities.

EDITOR COTTON:

Because, on the surface of things, the master mechanic's work is not directly involved in the actual manufacturing processes, you have published comparatively little discussion on this particular operating executive and his duty. I feel sure there are a number of master mechanics who read COTTON, and I am certain that his job is just as important as the jobs of the rest of the fellows around the mill. I therefore submit in this letter some thoughts of mine, being a master mechanic myself, as to some of the qualifications of a master mechanic, and some of the things he should do.

First of all, in my opinion, a master mechanic should be, as all men should be, a Christian gentleman. He is after all responsible for almost everything around the mill, from the ash pit to the last machine in the plant. He has to be a combination of a fireman, brick mason, carpenter, boiler maker, pipe fitter, a plumber, a tinner, a deep well man, an electrician, a lineman, and goodness knows what else. In fact, he has to know a little bit about anything that might turn up around the plant. And if a shut-down is caused from anything falling in any of the classifications listed, not a wheel can move until he comes down off of the ladder, and says, "Let her go."

A good master mechanic can save his salary in coal by watching the fireman closely. On one grade of coal he might fire one way, and on the next car of coal that comes in he might experiment with it. He can save much coal, in all probability, by firing altogether different with the second car load.

Now, there are other ways in which the master mechanic might save a few pounds of coal, but which would work out to the detriment of the mill as a whole. For example, he might be able to save a few pounds of coal by not having the mill properly heated. If he does, the work will not run good, the help will be so cold they can't work, and much bad work and waste will be the result.

Or, on Sundays, he might save a few pounds of coal by not warming the mill properly, especially if it is raining. What is the result? On Monday morning there will be, in the spinning room, one or two thousand bands to come off, and nearly this many rollers will lap up and ruin. Besides the cost of the bands and rollers, there will be lost a good many pounds of good production, and instead, there will be much bad work caused which will show up in the work all the way until it gets to the cloth room. Then it will be seconds and waste. I wonder if there are many men who are fooling themselves by thinking they are making a saving, when by cutting down on the coal in cases of this kind, they are really causing trouble in other directions. I think the master mechanic should look at any proposition from the viewpoint of the mill as a whole, and I believe if he does this he will be performing his job properly.

On the other hand, a lot of coal can be wasted by not cutting off the steam at the proper time. Windows and doors opened unnecessarily will waste a lot of heat. The correct idea is to have the mill properly heated at the right time, and to have the steam cut off at the right time. Much money can also be saved by cutting out the lights as soon as they can be gotten along without.

Isn't it true that the master mechanic is responsible for everything all of the time, while the overseer is responsible for one department in the mill while the mill is running? If this is the case, isn't it only fair that the master mechanic should be considered in his own right, in regards to the overseers?

C. G. (GA.)

Causes of Shade Change in Denims.

EDITOR COTTON:

In reply to the question recently asked by "CONTRIBUTOR NO. 4761," regarding the appearance of sudden changes of shade in 2:30 denim, I will offer the following as possible causes according to my experience along these lines:

On the face of the situation it appears that the difficulty is one of mechanical adjustment or mechanical wear on certain parts of the loom. I would suggest looking at the let-off and take-up mechanism very carefully, because the evil is alleged to be recurrent and intermittent.

The cause may be found at the slasher where the size is not being applied uniformly yard to yard on the warp because of some mechanical mal-adjustment at that point; probably on the blanket of the squeeze roll. Another mechanical defect on the slasher could be in the winding of the warp on the loom beam, where, for some reason or other, the tension was caused to vary abruptly, and since we know that the warp yarn is going to come off on the loom just as it is put on at the slasher, a slight slackening of the tension on the loom would cause a sudden change of shade in the cloth.

Of course this can be a filling defect even though the change of shade does not run for the full course of a whole quill. The cause of the filling rendering various shades can be attributed to unevenness in the roving from which the filling was spun, causing excessive light or heavy streaks to run for ten or fifteen yards in the filling yarn.

The twist in the filling can be looked to also as a possible cause, and it may be a portion of a quill has an entirely different twist from the remainder of the same quill due to slack bands on the spinning, or bad spindle oiling, which may evidence itself in only a portion of the yarn contained on a quill.

CONTRIBUTOR NO. 4765.

Some overseers and superintendents remind me of a cow tied out to grass by a little weak rope. If that fool cow would turn her head toward that clover patch and give one big lunge, *she could break that rope and soon be in clover. But, poor boob, she doesn't seem to know it.*

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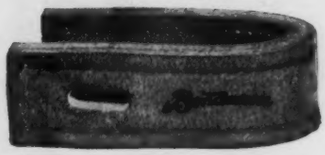
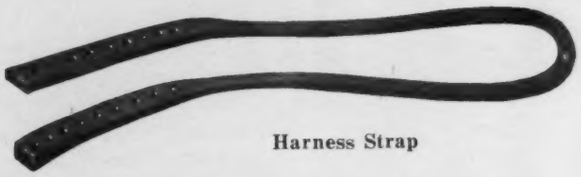


Lug Strap



Harness Strap

See the interesting Bondaron Exhibit in booths A-131-132, Southern Textile Show, Greenville, S. C., October 20-25, where will be shown:

- Bondaron Picker Leathers
- Bondaron Loop Pickers
- Bondaron Check Straps
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- Bondaron Lug Straps
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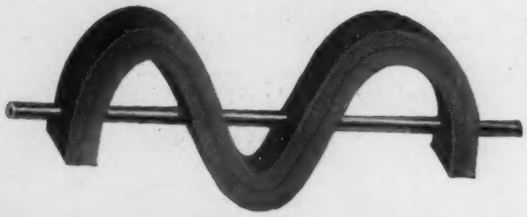
and the complete line of Bond manufactured Leather Belting.

Check Strap

Loop Picker



Bumper Strap

Day after day, Bondaron "The Leather with the hair on" Textile Leathers are proving their economical worth through the durability tests being conducted in textile mills in all parts of the country.

These tests are not of short duration — they extend over a period of years to prove that Bondaron "The Leather with the hair on" Textile Leathers will outlive other textile leather, in many cases—five to six times.

Such statements are not idle boasts. They are provable. Bondaron "The Leather with the hair on" Leathers welcome comparison under actual working conditions. One trial order will provide convincing proof of their merits.

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Slashing, Weaving Discussion at Ga. Meeting.

(*Continued from page* 1330.)

engineers. This was the first discussion of this character conducted by the organization, and was considered to be very successful. It is proposed to have a similar session once a year.

P. L. Lindsey, general master mechanic of the Thomaston Cotton Mills, Peerless Cotton Mills, and Thomaston Bleachery, at Thomaston, Ga., and Griffin (Ga.) Mills, conducted the discussion. The first question was: "Are high pressure lubricating systems practical on ring oiler shafting bearings? Also, what has been your experience with them on machinery?"

High Pressure Lubricating Systems.

M. R. Wallis, master mechanic, Lanett Mill, was the first to discuss this, stating that he did not believe high pressure lubrication is practical on ring oiler bearings because "these have no way to retain the grease." He said it is entirely satisfactory on ball bearings which have a grease-retaining washer. "They are also right on fan shaft bearings for pickers," he said, "but they will not suit on sleeve bearings."

"We are experimenting with high pressure lubrication on ring oiler bearings on line shafting," said A. B. Baker, superintendent, Georgia Duck & Cordage Mills, Scottdale. "We have recently installed 100 fittings, and find them very satisfactory. We had been oiling about every two weeks with regular hanger oil, and we have had these high pressure units in for fourteen weeks without oiling and indications are we will be able to run for six months without oiling. We have had only two hot bearings, and they were not traceable to the lubrication." Mr. Baker answered questions, saying that the high pressure fittings were installed by taking the plug out of the bottom of the bearing and putting the fittings in, leaving the bearing intact. He said they noticed no difference in the power consumption, and that they find no trouble with lubricant forcing out of the end of the bearing. He said they have practically every type of bearing, and that they are planning to equip the whole mill with the high pressure system.

"Our pickers are almost completely equipped with high pressure," reported J. C. Edwards, superintendent, Martha Hills, Thomaston. "We have done some experimenting with trying to completely equip them. I agree with the gentleman who says the sleeve bearing will not prove satisfactory with this system. We find we get lubrication on one side, but, especially on the 3/8 calender roll, the opposite end will stick.

"'We have all of our line shafting equipped with ball bearings, and use the high pressure system. We service these once in six months. All of our twisting and practically all of our spinning frame cylinder bearings are ball bearing, and they are equipped with high pressure lubrication. All of our ball bearing motors and a part of our sleeve-bearing motors are high pressure equipped."

"You say you have trouble on long bearings with them getting hot on one end?" asked Mr. Lindsey.

"I do not say they get hot; they are too slow-moving,'" replied Mr. Edwards. "We have experimented with different viscosities of lubricant, but haven't been able to find a grease that will flow through to the opposite end." It was suggested that he might put a tight-fit packing at one end, but Mr. Edwards said he had not tried that.

"If a man has to carry an oil cup and a grease gun, too," Mr. Edwards continued, "I do not approve of the high pressure lubrication. I have tried to equip all of our pickers so a man will not have to use an oil cup. We have done some experimenting on fly frames, and I feel the same way about lubricating them. There are some parts where high pressure is all right, but if you have to use an oil cup too, I do not feel it would be advisable to have the high pressure." Asked as to cleanliness, Mr. Edwards said "the high pressure has it on the oil."

"We have pickers thoroughly equipped," reported Mr. Rogers, "and I think we have had only one bearing failure and that was on that calender roll. We are equipping our looms. We have some fully equipped. We have put them on all of the sand roll bearings and so far the crank-shaft equipment is very good." He added, however, that he believed the crank-shaft bearing should have a recess at the top for retaining the lubricant.

Experiences with V-Belt Drives.

"What is your experience with the V-belt drive? What applications have you made with it, and with what results? When one belt in a drive wears out, what is your method of replacing?" This was the second question discussed.

E. H. Rogers reported that when they have a belt to wear out, they replace the entire drive and save the unbroken ones for use with other old ones.

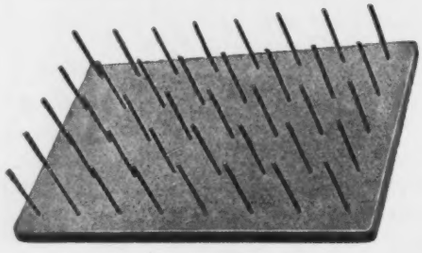
"We have had four years experience on the V-belt," reported Mr. Jenkins of Hillside, "and we find it is a mighty good drive when properly installed. We have it on twisters, drawing frames and triplex and centrifugal pumps, and when we replace a belt we replace only the individual ropes as they wear out."

Mr. Lindsey stated that his plants were the first to use the V-belt. He said they have several thousand drives of this type, ranging from a 75-hp. to ¾-hp., on many different applications. "We do not change one rope," he said. "If one goes bad, we put on a new whole belt, and gauge the used ones for later use." He called upon Mr. Edwards, who said that his experience parallels that of Mr. Lindsey.

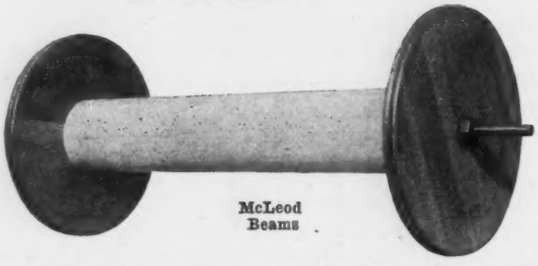
"We are the largest users of V-belts," continued Mr. Edwards. "Our previous experience with them was so satisfactory that when we built our new mill we adopted them everywhere we could. This belt is, I think, out of the experimental stage. For the benefit of the man who reported that he changes one rope at a time, I am sure he will find that he is doing the wrong thing. We replace all of a belt at one time. If you have five ropes, and one gives way, your other four ropes are going to be stretched, and if you put a new rope in it will put too much strain on the new rope. We change the whole drive. We may not do it on our larger drives, but on our five-rope drives on

McLeod Wood Top Rolls

McLeod Temple Rolls



McLeod Pin Boards



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Back of every McLeod product is a lifetime of experience in making similar products for the textile trade, coupled with a sincere effort to give the kind of quality that has led so many mills in the South and North to use our equipment exclusively.

McLEOD WOOD TOP ROLLS for Spinning frames—*No cockled yarn — No floating fibres, No waste* — Increased *breaking strength.*

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McLEOD LOOM BEAMS — Made of selected whitewood or fir, steel gudgeons.

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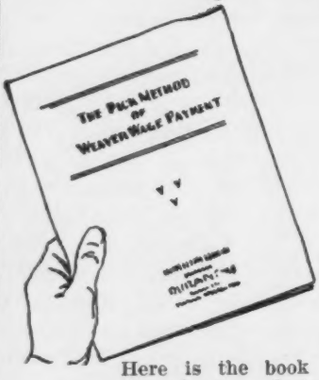

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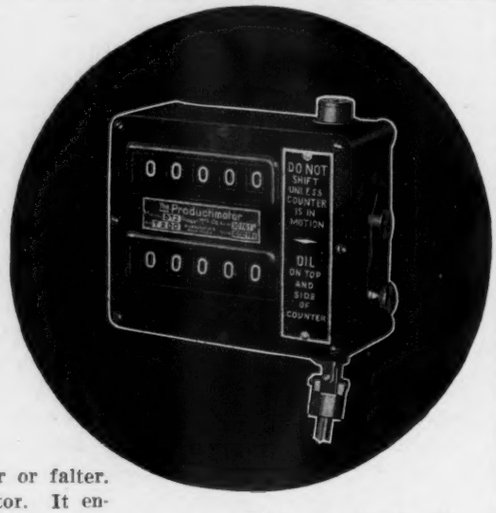

Here is an automatic counting device . . . the Productimeter . . . that laughs with scorn on make-shift counting contraptions. *Precise, accurate, and as durable as steel.* Not a muscle to give out. No mind to err or falter. The Productimeter is a reliable detector. It enables you to improve production and to check more accurately the wages you can afford to pay. Write for our booklet outlining its many advantages.

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twisting and spinning, we do, and put the old ones aside and measure them for later use.

"We have a variety of applications, from 75-hp. down. I do not think there is a reasonable limit to the surface speed of this belt. An engineer told me the other day he had them going 8,000 feet per minute, which is a speed we never attain in a cotton mill. We have them on a variety of ratios. It is a very adaptable drive as compared with the chain, and I much prefer the V-belt." Mr. Edwards said he had not put the V-belt on the beater shaft on pickers, since this is new equipment, but as they change he is going to put on the V-belt. Mr. Rogers stated that he has the V-belt drive on this new two-beater single process pickers, and has no trouble at all; said it is very pretty and smooth. Mr. Cooper reported that they have one V-belt drive on a 250-hp. motor on the line shaft.

Reporting for the Griffin Mills, Mr. Lindsey said they are equipping all of their spinning with individual drive with V-belts. As to the life of the belt, he said they have some at Thomaston which have been in continuous operation day and night since 1924.

Acetylene and Electric Welding.

"What are the comparative merits of the electric welder and the acetylene welder?" was the next question. It seemed to be the general concensus of opinion among B. R. Nance, R. B. Betts, F. H. Cooper, and others who discussed this that each type has its place in the mill. As one man pointed out, it depends a great deal on the operator; that for cast-iron and light steel work, the acetylene was preferred, but that the electric was better for large work. Mr. Edwards asked if anyone carried the electric welder into the mill for jobs; the opinions expressed did not seem to approve of this.

Inspecting Repair Work.

"What should be the relation between the mill and mechanical departments? How can the mechanical department decrease the amount of supplies used by other departments? What method is best for inspecting work before it leaves the shop, and afterwards?" This was the next question.

Mr. Edwards said that while, in a large plant, the master mechanic could not see everything personally, he should have a foreman in the shop who could. He feels that if a repair is made necessary through negligence, either carelessness or improper oiling, "a ceremony should be held about it," just as for interior work in manufacturing. "If we would just do away with repair work due to faulty oiling, we could do away with much of our machine shops," he said. Mr. Edwards described their system, in which three copies are made of each shop order, signed by the department overseer. These accompany the job through the shop, and the amount of time and material used is put on these copies. One copy goes back to the department head, one to the superintendent, and one is retained by the master mechanic. They are working out a budget system for each department, he said, and the department head checks his copy to see that the machine shop is charging

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Contains no Chlorides, no Mineral Salts, and no Mineral Oil.

A Compound that has never given any trouble at the finishing plant. Will give a good increase in tensile strength. This Compound and our Service will give the feel and weight desired.

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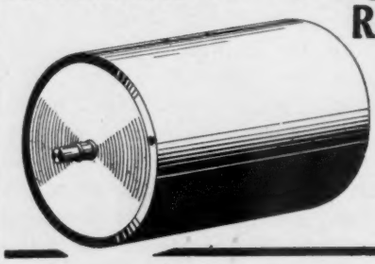
SAVE FREIGHT ON SQUEEZE ROLL RECOVERING



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him the correct amount for the job. He later explained that, when a part is sent for repairs, a duplicate is requisitioned from the supply room, and the mended part is sent to the supply room to replace it.

R. B. Betts, of the Columbus Mfg. Co., stated that their supply department is a part of the mechanical department, and a record is kept of all supplies used, and once a month they post the amount used by each fixer, and a copy is sent to each overseer for his department.

Mr. Lindsey stated that part of their repairs also go through the supply department.

Maintaining, Inspecting and Gauging Motors.

"What system of maintenance and inspection on motors do you use? Do you gauge your motors at every cleaning of the motors, or have you certain times for gauging?" This was submitted next.

Jim Davis, of Martha Mills, said, "We inspect our motors and gauge them about every three months. We blow them out daily." Mr. McCollister of Swift Mfg. Co., stated that he has his motors gone over every week, and inspected, and oiled if necessary. The bigger ones are checked over every 60 or 90 days.

At Lanett, "we blow our motors every two weeks, and oil them every two weeks, and gauge them every month," said Mr. Wallis. He stated that he has some trouble with compressed lint in them, but that he has so many, that is as often as he can get around to them.

'We find we get that lint in them if we do not keep them clean," said Mr. Edwards, "and we find a decided lowering of temperature when we keep them clean."

Mr. Lindsey asked if anyone had tested a motor that was low on the bottom or side, to see if there was any change in the amperage. Mr. Wallis said this would not increase until the rotor hit the stator.

Taking Care of the Plant Tools.

In answer to the next question, as to the method used in taking care of all plant tools, it seemed to be unanimous practice to keep the tools in a room or cupboard, issuing them out as needed, and holding the man responsible for their return.

Lubricating Ball-Bearing Motors.

The next question asked, "What is the best method of oiling ball-bearing shafting, also ball-bearing motors?" It was stated that this had been answered under the first question, as the high pressure system is the proper way. Mr. Edwards asked if anybody had tried using high-pressure lubrication on the jack gear stud on spinning frames. No one answered affirmatively, and Mr. Edwards reported that he is doing some experimenting with it.

Preventing Drips from Line Shaft Bearings.

The old question of how to prevent oil drip from line shaft bearings came up next. Mr. Edwards and Mr. Lindsey and others stated they had found it advisable to oil their motors and shafting while it is stopped. Mr. Betts pointed out that it is important

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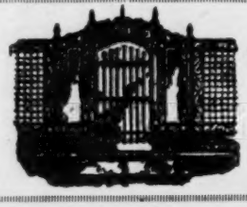

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to keep the oil wipers in good shape.

There was next a brief discussion as to the comparative merits of the centrifugal and steam pumps in the boiler room. Mr. Nance said that he prefers the centrifugal type.

Taking Care of Rush Jobs.

"What system would you recommend to take care of rush jobs in case of a break-down; this includes all departments?" Mr. Heymer summed up the opinion on this question by stating that it is answered by the one word—co-operation; that if a rush job comes in, system must be forgotten and the plant or department started up.

A brief discussion as to stokers versus hand-firing followed. Mr. Grant of Manchester stated that he got better evaporation with stokers. Mr. Betts said they reduced the price of coal, and the consumption, with less ash and less coal to handle, by the use of stokers.

Making a Mill's Own Supply Parts.

"Do you believe it is advantageous to make supply parts at the mill?" was the final question on the list. Mr. Cheek of New Holland said that he believed a mill could make its own gears, just as satisfactory and cheaper than bought ones, and that there are a lot of things that can be made at the mill; but that "when it comes to a loom part it should come from a loom manufacturer."

Mr. Rogers said that at Fulton Bag they make quite a number of their parts, "and we find we can save considerable money on certain parts, and not on others. We usually keep a very close record on the cost of every part. If we can save money on it and have as good a part or better than we can buy, we make it ourselves. With us quality is first considered, then price." Mr. Lindsey also emphasized the importance of keeping a cost on the parts manufactured.

Most mills make their own studs," said Mr. Cooper, "and I would like to know if anybody has found anything better than cold-rolled steel for this purpose.'" Mr. Lindsey said they had found it necessary to use a higher carbon steel, and, in some cases, nickel. This virtually concluded the discussion, and the meeting was adjourned. George S. Elliott, superintendent, Pacolet Mfg. Co., New Holland, Ga., was the lucky winner of the hat which was awarded to the man whose name was drawn from the list of those who attended all sessions of the meeting. The next meeting of the organization, to discuss carding and spinning, will be held in March, 1931.

The man who flies into a rage and cusses everybody out when something goes wrong will soon discover that he has got to fly into a rage every time he wants something done or his men won't know whether he really means what he is saying or not.

The overseer or superintendent who "beats the other fellow" doesn't generally have to hunt a job.

The job hunts him.

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ANSWER to *Your*
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Discolored size or size running thin is no longer a problem to mills who are equipped with QUEEN SIZE CONTROLS. For with Queen Controls they no longer mix the size of one slasher with that of another, and are free to run as many color warps as desired.

QUEEN CONTROLS eliminate soft warps by automatically keeping the size uniform and always at even level in the size box. Each warp gets exactly the same amount of size.

QUEEN CONTROLS are sturdily built to stand hard use, no delicate parts to break or get out of adjustment and are absolutely guaranteed to improve your work.

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TEXTILE BOOKLETS *Worth Writing For!*

The booklets or catalogs briefly mentioned below may be obtained by any reader of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.

1. Cotton Picking, Carding and Spinning—Covered by three different catalogs. Picking catalog covers Opening and Picking Machinery; Card Room catalog covers Cards, Combers and Roving Frames; Yarn Machinery catalog covers Spinning, Twisting, Spooling, Quilling and Reeling. By Whitin Machine Works, Whitinsville, Mass.

2. Pepperell Equipment—10 page illustrated booklet, showing High Speed Warping from cones as adopted by Pepperell Manufacturing Company after thorough experiments. Installation and product photographs. Issued by Universal Winding Company, Boston, Mass.

4. New Methods of Opening Cotton, also "Brown" Automatic Mixing and Cleaning Distributor—Illustrated booklets showing advantages of Centrif-Air Cotton Cleaning System. Pamphlets also on better picking and carding and pneumatic trunk line cleaner. Issued by Centrif-Air Machine Company, Atlanta, Ga.

5. The Bahnson Master Control—Bulletin No. 301, 5 pages. Illustrated. Automatic device designed to control humidifying equipment so as to maintain a constant relative humidity. By the Bahnson Company, Winston-Salem, N. C.

6. "Cotton" Weather Vein, 32 pages; "Rayon" Weather Vein, 40 pages; house publication, illustrated. Bulletin 58, 80 pages, illustrated; **Manufactured Weather**—the automatic control of air conditions within buildings. Carrier Engineering Corporation, Newark, N. J.

8. Stewart Compounds for Roving Frames—Illustrated literature on roving frame operation. By Precision Gear Co., Gastonia, N. C.

9. "Custom-Built" Motors—Complete set of bulletins covering various types of electric motors for textile master mechanics and executives. By Louis Allis Company, Milwaukee, Wis.

10. Leathers, Textile—Booklet No. 101, 48 pages. Illustrated. Showing BONDARON Check Straps—Lug Straps—Harness Straps—Pickers—Belting, both round and flat, etc. Horsepower tables and other interesting information. By Charles Bond Company, 617 Arch Street, Philadelphia, Pa.

11. Whitinsville Rings—16 page illustrated booklet. Describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville Spinning Ring Co., Whitinsville, Mass.

13-A. Equipping Modern Textile Plants—Booklet, 35 pages, illustrated. Describes value of Monel Metal equipment in textile plants and presents reports from mill owners and operators on actual experiences; equipment, descriptions, etc. **Also Dyed in the Truth**—Reprints of advertisements of special interest to textile dyers. International Nickel Company, Inc., 67 Wall Street, New York, N. Y.

14. Emerson Conditioning Ovens—2 booklets on conditioning of textiles, or determination of the amount of moisture in textiles. Issued by Emerson Apparatus Co., Melrose Highlands, Mass.

15. Saving Labor, Material and Power in the Textile Industry—Bulletin No. 133. Illustrated. Controlling, Recording and Indicating Instruments in textile mills. Temperature, Pressure, Humidity, equipment layouts and descriptive applications. The Foxboro Company, Foxboro, Mass.

17. The Powers System of Thermostatic Control—"Slasher Room is Bottle-Neck of Textile Mill." 18 page illustrated booklet showing importance of proper treatment of cloth in slasher room and advantages of Thermostat over hand control. Also room temperature control illustrations. Issued by Powers Regulator Co., 2739 Greenview Ave., Chicago, Ill.

18. Popular Industrial Chemistry—162-page handbook for dyers, chemists, finishers, purchasing agents. By Kali Manufacturing Company, Philadelphia, Pa.

19. Quaker City Chemical Co.—48-page booklet containing useful information, tables, formulae, on dyeing, bleaching and finishing all textiles. Issued by above company, 2736 North Broad St., Philadelphia, Pa.

20. Bleaching, Dyeing, Finishing and Printing Textile Goods—70-page booklet containing interesting information on faults and methods in finishing goods, useful tables and definitions. By Bosson & Lane, Atlantic, Mass.

21. Warp Sizing and Composition of Cotton—Folder containing reprints of articles carried by textile publications of interest to progressive mill superintendents. By Seydel-Wooley Co., 748 Rice St., Atlanta, Ga.

22. Tragasol and Its Uses—Booklet, 60 pages, constituents and properties—Dissolving and preparation—sizing and dressing of yarns—cloth finishing—miscellaneous. By John P. Marston Co., 247 Atlantic Ave., Boston, Mass.

23. Practice of Rayon Sizing in American Mills, Raygomm, Lakoe Gum—Three booklets on products for sizing and finishing rayon and other textiles, presented by Stein Hall & Co., Inc., 285 Madison Ave., New York, N. Y.

24. Wyandotte in the Textile Mill—90-page booklet with information on bleaching, dyeing all textiles, including hosiery.—J. B. Ford Co., Wyandotte, Mich.

25. Textile Specialties and Woodworking—16-page illustrated booklet describing wood top rolls, pin boards, loom beams, warper beams, etc. By Wm. McLeod, Inc., Fall River, Mass.

26. The Guide Post—18-page booklet showing porcelain guides, rollers, eyes used by textile mills.—By Page-Madden Co., 277 Ralph Ave., Brooklyn, N. Y.

27. The Seven Factors of Belting Economy—Booklet, 112 pages, illustrated, containing authoritative information on the economical layout, care and operation of belt drives. Chas. A. Schieren Company, 33 Ferry Street, New York, N. Y.

28. Akron Belting—Practical rules and general information for users of belting with belting catalog. By Akron Belting Co., Akron, Ohio.

30. Lubrication of Textile Machinery—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York and New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

31. Aluminum Paint—The Coat of Metal Protection—Booklet, 46 pages. Illustrated. The protecting and light reflecting qualities of Aluminum paint; its advantages to textile industry; where it is used; specifications. By Aluminum Company of America, 2400 Oliver Bldg., Pittsburgh, Pa.

32. Flooring, Open Steel, Area Gratings and Steps—Folder, 6 pages. Illustrated. For platforms, walks and stairs; non-slipping. By Kerlow Steel Flooring Company, Jersey City, N. J.

33. Cast Iron Columns—18-page booklet on use of cast iron columns in mill construction. By National Cast Iron Pipe Co., Birmingham, Ala.

34. Ornamental Iron & Wire Work—64-page booklet showing movable wire partitions for stock rooms, etc. Also other iron and wire installations. Badger Wire & Iron Works, Milwaukee, Wis.

35. Seating Equipment—Automatic, adjustable, ten inch height adjustment, all steel, mill and factory seating specialty, illustrated booklet, 10 pages. Vitek Manufacturing Company, Omaha, Nebr.

36. Hosiery Inspection, Seamless and Full Fashioned—Illustrated folder. Also describes new Leg Examining Machine for full fashioned ladies' stockings. Edward R. Ammon, Reading, Pa.

38. Sleaziness in Full Fashioned Knitting—Illustrated survey with samples of fabric showing causes of sleaziness, and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog of Reading full fashioned machine with general information on subject of full fashioned knitting.)

39. Trend of Sales of Silk, Rayon and Cotton in the Piece Goods Departments; twenty-four-page booklet; prepared by DuPont Rayon Company in conjunction with National Retail Dry Goods Association. Copy furnished without charge by either of above. DuPont Rayon Co., 2 Park Ave., New York, N. Y.

40. The New Competition in Color—20 page illustrated booklet. Discusses future trends in business and their significance, present trend toward fast colors in textile industry and opportunity this trend offers for increased profits is properly utilized. By Franklin Process Co., Providence, R. I.

41. Budget Control—40-page booklet showing how each part of business budget should be prepared and principles of its effective operation together with a summary of benefits.—by Ernst & Ernst, accountants, 27 Cedar Street, New York, N. Y. (This company also has available booklets on **Standard Costs, Business Control Through Analysis, The Better Wage, Factors to Consider in Working Out Mergers.**)

42. Factoring—Booklet, 11 pages. Summary of Factoring Service provided for Manufacturers of Textiles. By Textile Banking Company, 50 Union Square, New York, N. Y.

44. Points of Interest in and Around Atlanta—36 pages. Illustrated, describing places of scenic and historic interest in Atlanta in particular, and the Southeast in general. Atlanta Biltmore Hotel, West Peachtree, Fifth, Sixth & Cypress Sts., Atlanta, Ga.

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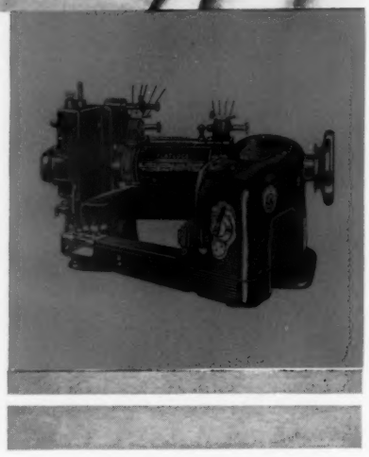

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Knitting Department,
Golden Belt Mfg. Co.

Here is a straight-forward description of his method of straightening full-fashioned needles, by one of the leading southern hosiery manufacturers. He starts at the beginning, and tells how he instructs his knitters to straighten needles. It is clear and understandable and complete.

Reprints of this article, for further distribution, are available, and those interested in securing these should communicate with COTTON, advising the number desired.

WHEN WE BEGAN to manufacture full-fashioned hosiery some years ago I learned that one of the big problems connected with the business was the needle problem. I found that the successful operation of the machine and the quality of the product depended to a great extent on the condition of the needles. So I began a study of needles. I sought information from all the old knitters and everyone who claimed to know needles and how to straighten them.

I soon found that nearly every knitter had his own peculiar ideas and methods of straightening, and that most of them were poor instructors of beginners.

The idea of long years of apprenticeship to learn to knit also applied to needle straightening, and it was not in the order of things for a beginner to be able to straighten a needle. Because of this prejudice, the old knitter was very critical in his inspection of a learner's needles.

I have many times borrowed straight needles from an old knitter and paid him back the same needles the next day, only to have him inspect them and find all kinds of fault with them. So I learned in my study of needles that there was defective vision and defective minds, as well as defective needles.

On the double shift jobs there was friction between old knitters because they could not agree as to the correct shape of a needle.

All the knitters in our plant used the plier method of pliering needles, which is to say they held the nee-

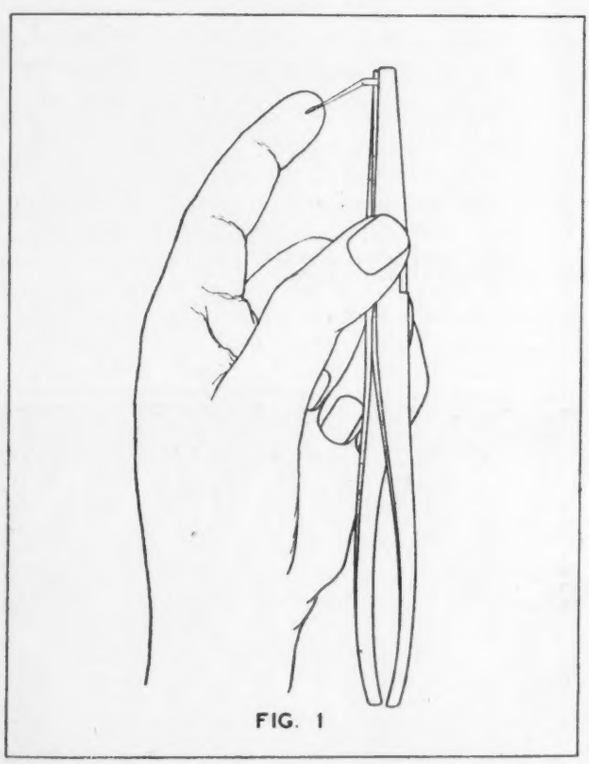

FIG. 1

INSPECTING THE BACK OF NEEDLE.
The pliers are held in the right hand, and the forefinger of the left hand is placed just beyond the head of the needle for shading purposes. The back of the needle is then sighted from the butt to the head .

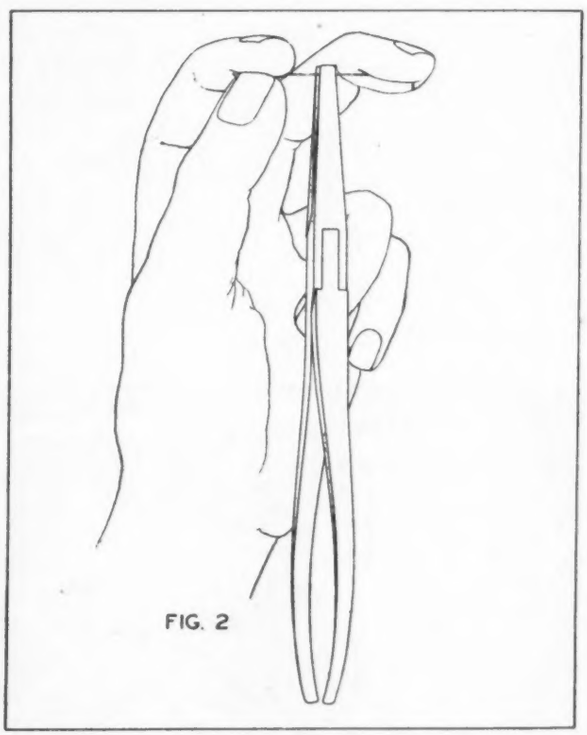

FIG. 2

STRAIGHTENING THE BACK.
The needle is placed in the pliers with the back either up or down, according to the bend in the back. Care must be taken to allow the proper space between the fingers and pliers on both sides of the pliers to allow for bending.

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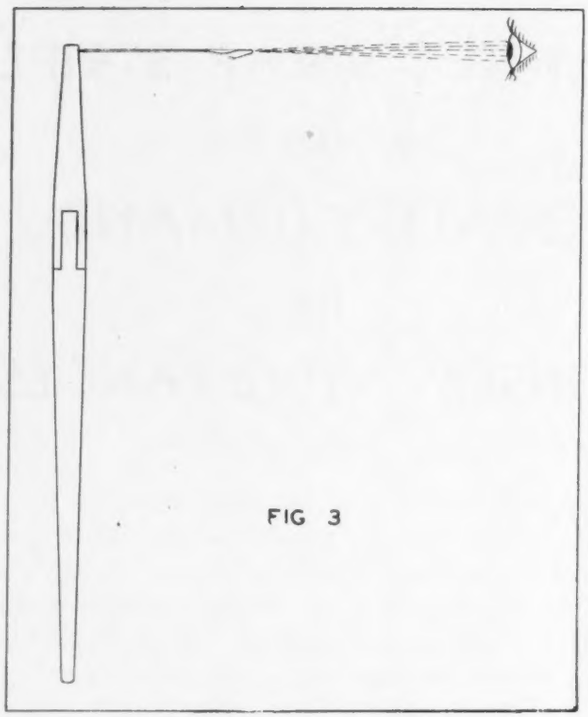


INSPECTING SIDES OF NEEDLE.
The needle is placed in the pliers with the butt up and held in a position directly in front of the body. The sides of the needle are then sighted from the head of the needle.

dle in the left hand and moved the pliers with a certain twist back and forth over the stem of the needle to straighten it.

One day we had an old erecter visit the plant to correct some trouble on a machine that we were not able to operate. In some way he broke out quite a few needles. He then began to plier needles with his fingers to replace them. I was very much interested in his method and watched him very closely. I inspected a good many of his needles and was very surprised to find he was doing a good job of it. I learned that one of his secrets was he only worked on that part of the needle that needed to be worked on. He let alone those parts that the needle manufacturer had been so fortunate as to get correct.

With the information I had been able to gather from all sources, I worked out a plan of instructions for learners, which I have used successfully for some years and which I hope will be of some help to the readers of this article.

I observed in straightening needles that in straightening one part it was so easy to bend another, and that it was very important to begin right and end right to complete the job as a whole. The back of the needle being the stronger point, I began here, and the beard being the weakest point, I ended there. So I wrote out on a card for each beginner what I called the four steps, in their order of procedure, as follows:

(1) Back
(2) Side (looking at head).
(3) Hang of head
(4) Beard

After explaining the difference between a curve and a kink in a needle, and how to remove each, I proceeded with an explanation of Step No. 1.

Inspecting and Straightening Back.

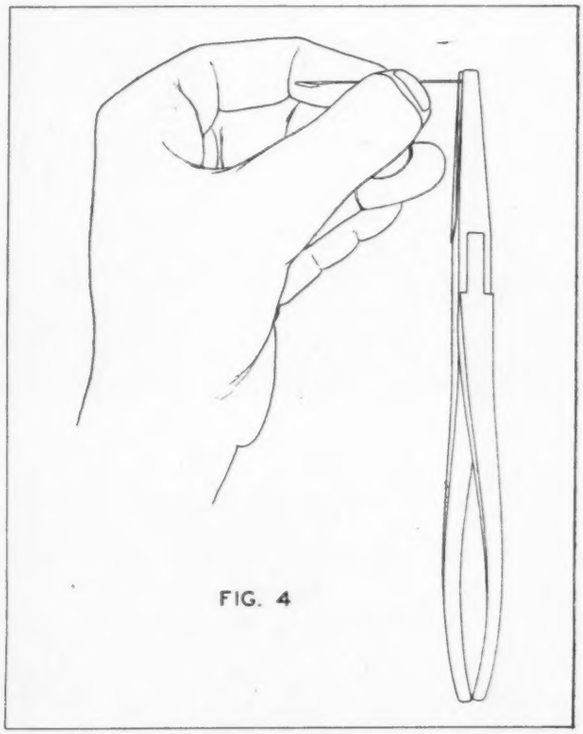
Some knitters prefer a certain amount of curve in the back of a needle, but this brings up a difference in opinion of how much, so I remove this question by making the back straight from the butt to the back of the head. I see that a straight line is made through the center of the back by inspecting, as illustrated in Fig. 1.

If there is a bow in the back, I grip the needle with the pliers in the right hand and pull the needle down with the first two fingers of the left hand, leaving about $\frac{1}{8}$-inch space between the fingers on either side of the pliers for bending space. (See Fig. 2). To move the needle through the jaws of the pliers for several pulls, it is only necessary to raise the thumb of the left hand to grip the needle and move it to a new location, while the right hand releases the grip of the pliers. The needle may be stepped across with as many moves and pulls as desired.

If the back is bent in the shoulder, or near the head, and there is not room for the finger, then catch the needle at this point in the bill of the pliers and push the needle in the desired direction. This done, we pass to Step No. 2.

Inspecting and Straightening Side.

With the butt of the needle up, as illustrated in Fig. 3, hold the butt in the bill of the pliers and sight down the needle to see if the sides are straight. If there is a curve, turn the plier and needle to a con-



STRAIGHTENING A CURVE.
The thumb and forefinger are bent to form a naught, and with the forefinger slightly in front, or the thumb slightly in front, according to the curve, the curve is then rubbed out by applying the pressure of the nails and a rubbing action to the needle. The needle is held securely in the pliers with the butt up.

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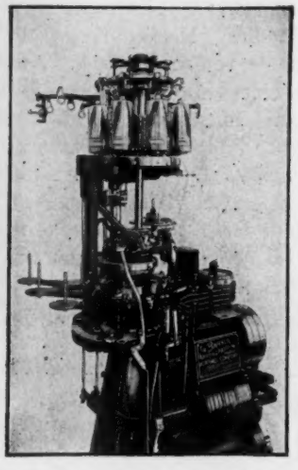

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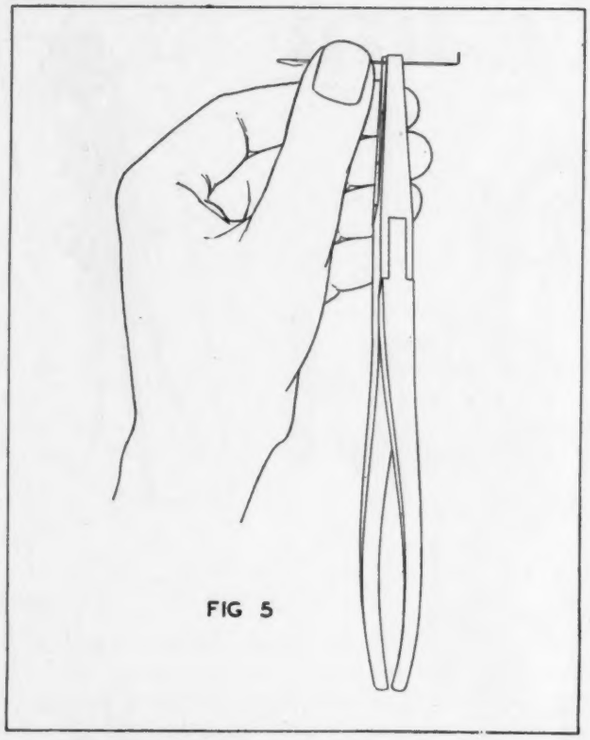
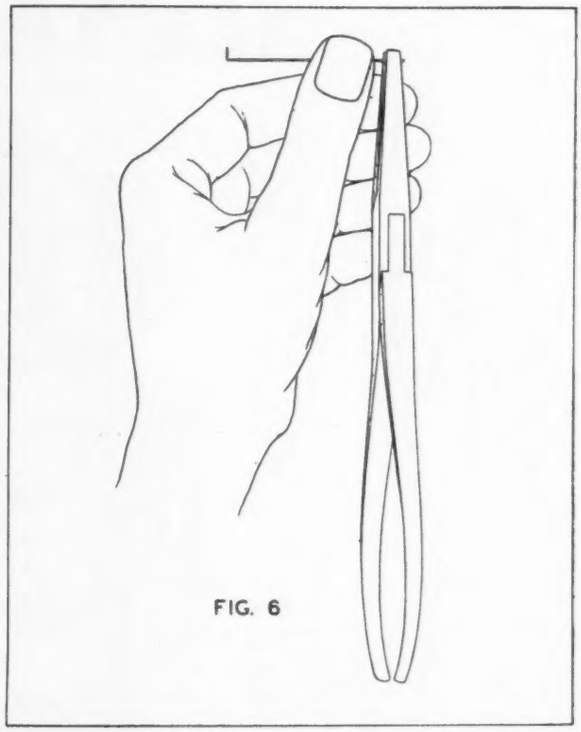


STRAIGHTENING A KINK.
Here the needle is gripped with the bill of the pliers exactly at the point where the kink starts, and the needle, by means of the thumb or finger, pushed in a direction opposite to that of the bend.



CENTERING THE HEAD.
The shoulder or neck of the needle is gripped with the bill of the pliers at the point where the deflection begins and the stem of the needle bent in the opposite direction.

venient position and grip the sides of the needles with the points of the thumb and finger in the shape of a naught and by off-setting the points of contact of the thumb and finger the needle may be deflected in the desired direction. (See Fig. 4.) Then by sliding the fingers back and forth along the curve, the curve will be removed.

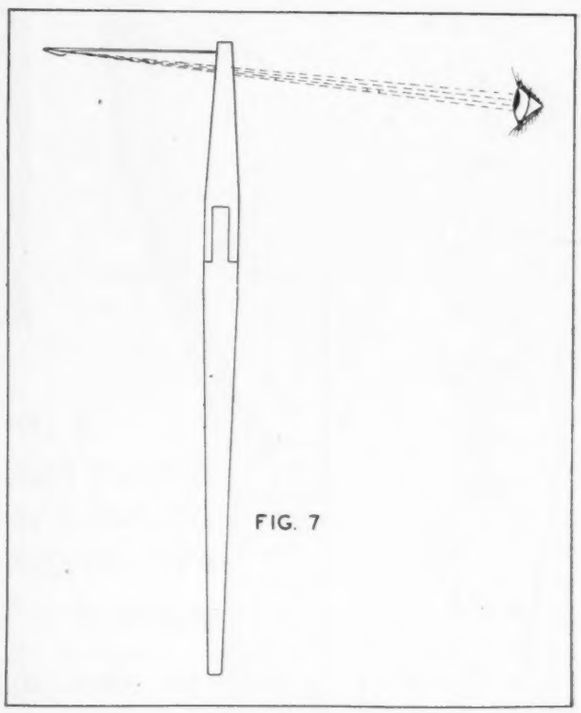
If there is a kink in the needle, grip the needle with the bill of the pliers exactly at the point of the kink and push the needle in the opposite direction. (See Fig. 5).

In stamping the groove in the shoulder of the needle, in almost every case the head of the needle is thrown out of center toward one side or the other. To correct this, grip the shoulder or the neck of the needle with the bill of the pliers at the point where the deflection begins and bend the stem or the needle in the opposite direction. (See Fig. 6.)

It must be understood that space must be allowed for a springing motion to remove a curve, and a close up bend to remove a kink. We now go to Step No. 3.

Hang of Head.

When the sides are straight and the head is centered, with the needle in the same position in the pliers as in the preceding step, turn the pliers completely around. Then with the needle on the opposite side of the pliers from the body, sight through the crack in the pliers under the belly of the needle on through the space between the point of the beard and the groove to the head of the needle (that little curved part that connects the beard to the stem) and see if it hangs plumb in the same plane with the center of the crack. (See



INSPECTING THE HANG OF THE HEAD.
The only difference in the position here and that shown in Fig. 3 is that the pliers are turned completely around. The object here is to sight through the crack in the pliers and see that the head of the needle (that little curved part that connects the beard to the stem) is parallel with the crack in the pliers.

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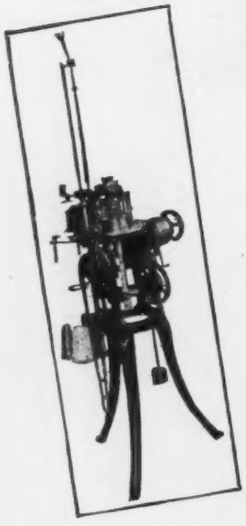

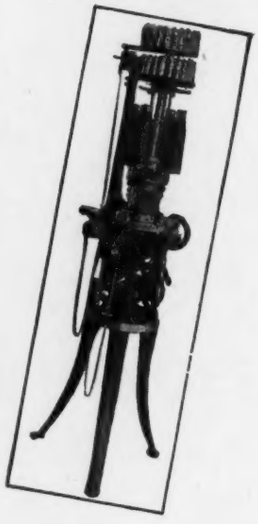

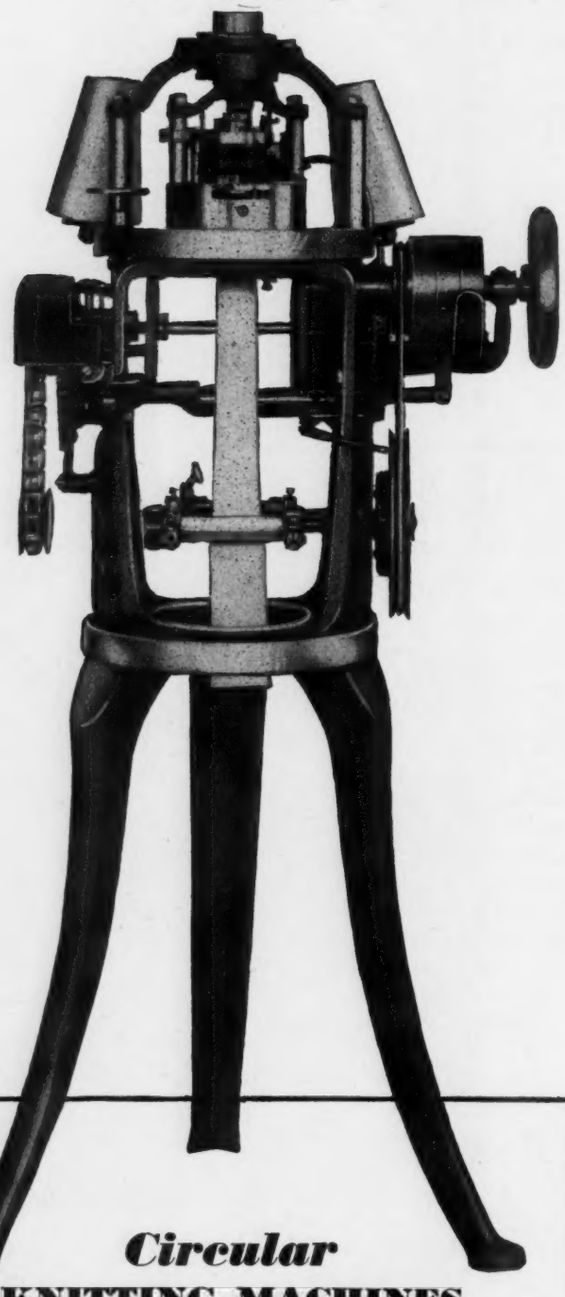

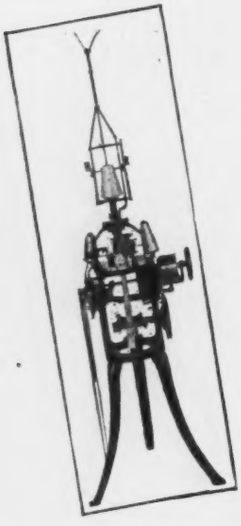

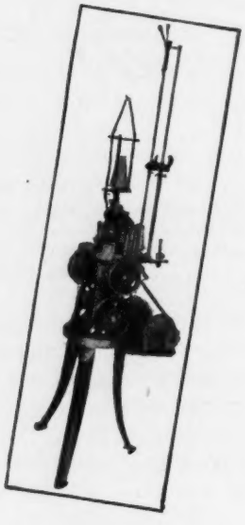

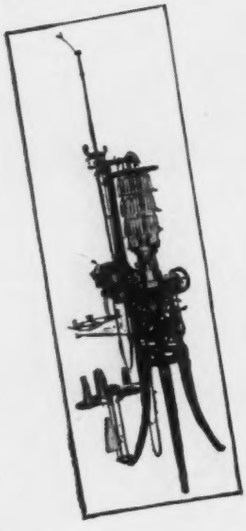

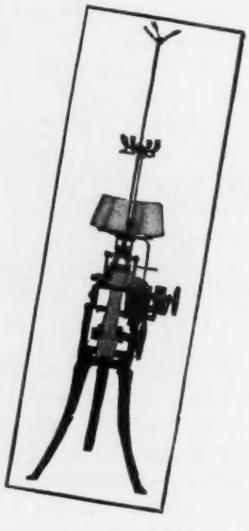

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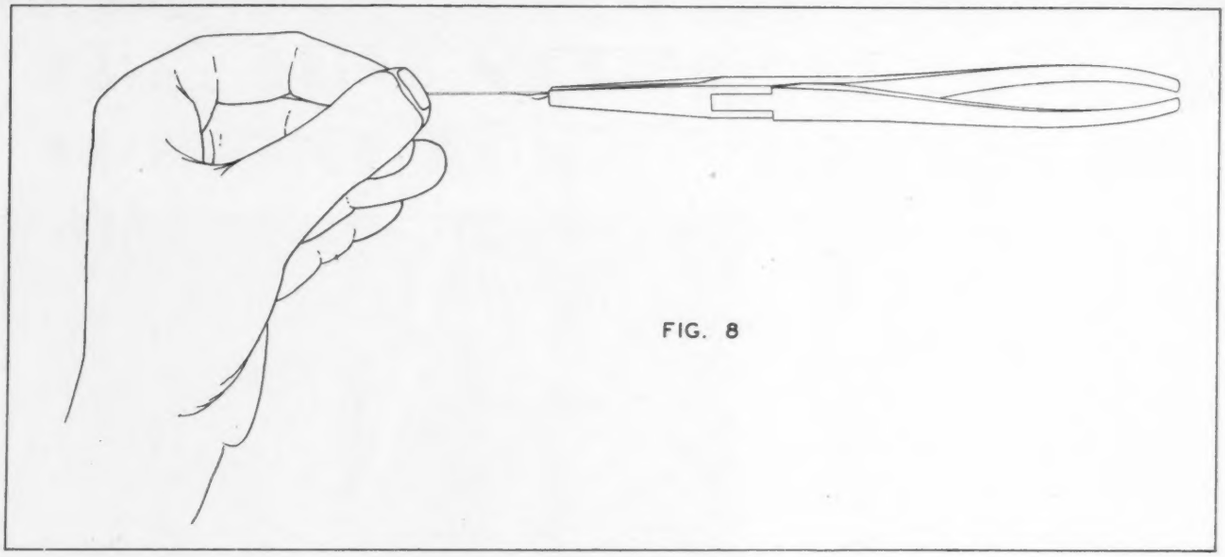

FIG. 8

STRAIGHTENING THE HEAD.

The tip of the head is caught in the tip of the bill of the pliers, with the butt of the needle up. With both wrists resting against the stomach, the stem is then slightly twisted by means of the upturned butt.

Fig. 7.) If the head hangs awry to the crack in the pliers, then catch the tip point of the head with the tip end of the bill of the pliers, and resting both wrists across the stomach, (See Fig. 8) catch the upturned butt with the thumb and finger of the left hand and gently twist the stem.

In inspecting a needle for a twisted head, don't get the head confused with a crooked or bent beard, as this will be attended to in a later operation.

In holding the butt of the needle in the pliers to examine the hang of the head, it is assumed that the butt is bent parallel with the sides of the stem. If this is not the case the needle is not properly built, and should be returned to the manufacturer. This point may be determined by gripping the sides of the stem just inside the butt and looking through the crack of the plier to see if the butt stands in line with the crack. A slight deflection can be corrected by twisting the butt in line.

I believe the head should lie in the same plane with the butt and for this reason I hold the butt in the pliers in examining the hang of the head, rather than the sides of the stem inside the butt. This is because I believe the butt controls the position of the needle in old bars where the slots are worn more than the sides of the needle. Now, with the hang of the head correct we proceed to Step No. 4.

The Beard.

This step probably gives learners more trouble than any of the others because it is the most delicate and must be so handled.

The first inspection is to see if the beard is over the groove or eye of the needle, as shown by Fig. 9. The needle may be rocked up and down in the point of the pliers with the fore-finger and thumb of the left hand to get different angles and light reflections. It is not only necessary to have the point of the beard over the groove, but the entire length of the beard over it. The idea of twisting the head of the needle with the point of the pliers in order to twist the beard over the groove is all wrong, as the head has been put in the proper position by Step No. 3.

If the beard is bent or curved, it should be pliered in position, as shown by Fig. 10. Hold the stem of the needle between the thumb and second finger of the left hand and using the ball of the forefinger for a rest, slide the point of the pliers over the beard with

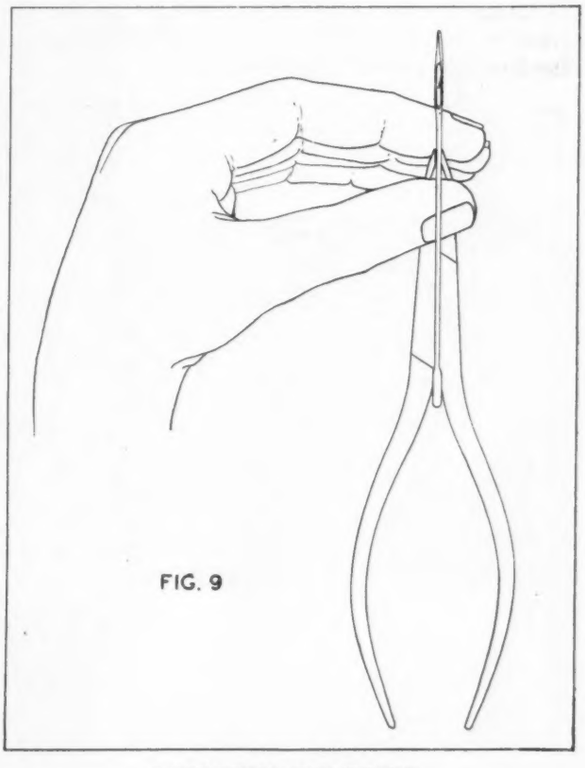

FIG. 9

INSPECTING THE BEARD.

With the groove up, the needle is grasped about the center of the stem with the pliers and the forefinger placed under the needle on one side of the pliers and the thumb under the other side. This is to enable the inspector to give the needle a rocking action, which aids in determining whether or not the beard is over the groove.

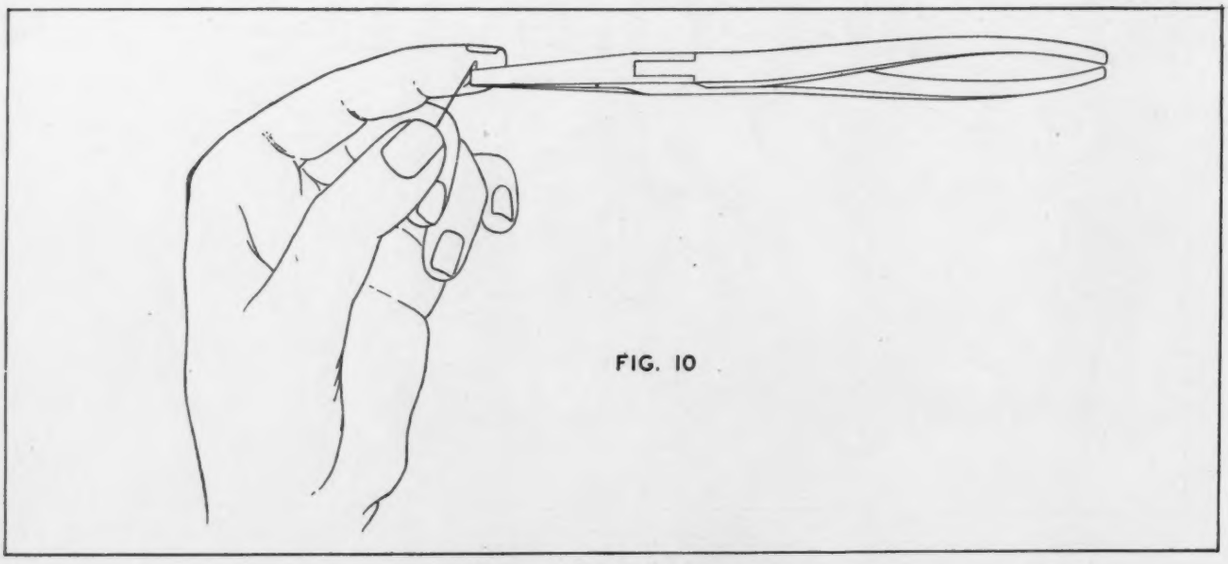

FIG. 10

PLACING BEARD OVER GROOVE.

The stem of the needle is held between the thumb and second finger of the left hand, while the head is rested on the forefinger. The beard is then grasped with the point of the pliers and given a slight twist up or down.

a slight twist up or down, as the bend requires.

If there is not sufficient bend at the point of the beard, the point may be bent, as shown in Fig. 11, by gripping the point of the beard with the end of the pliers and turning the pliers toward the stem. The point should be bent just enough to give an easy slide against the press. Too much bend, giving a hawk bill shape, is objectionable. As a rule the needles come from the factory with the correct bend at the point of the beard and should be let alone.

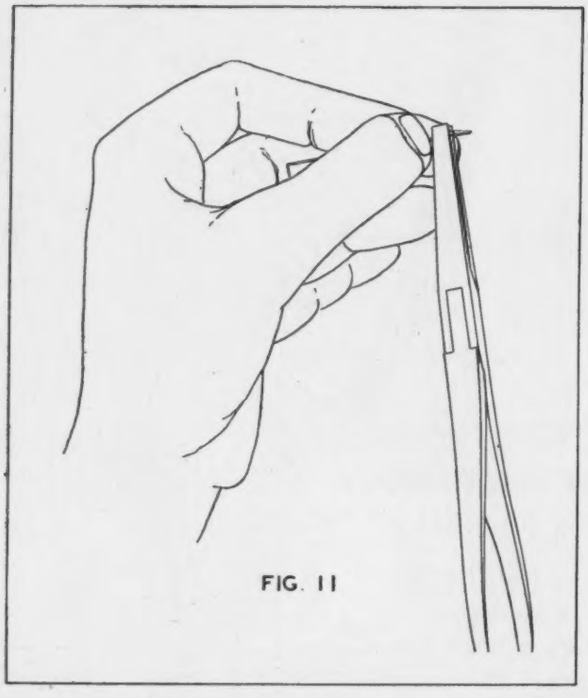

FIG. 11

BENDING POINT OF BEARD.

If the bend of the point here is insufficient, the point is caught in the bill of the pliers and the pliers given a slight turn toward the stem. The point should be bent so that when the needle is slid through the thumb and forefinger, neither will be pricked by the point.

With the proper bend at the point of the beard, we now inspect the needle for the height of the beard. (See Fig. 12.) The space between the point of the beard and the groove should be the thickness of a stem of a needle of the same gauge. Pass the side of another needle under the point of the beard to test the height. If the beard is too low, it may be easily raised. If it is too high, which is usually the case, lowering the beard is a more difficult operation. A close inspection will usually reveal that the beard is slightly concave at the center, which holds the point too high. This can be easily corrected by pressing the point of the beard into the groove with the thumb nail of the left hand and inserting the point of the little blade of a

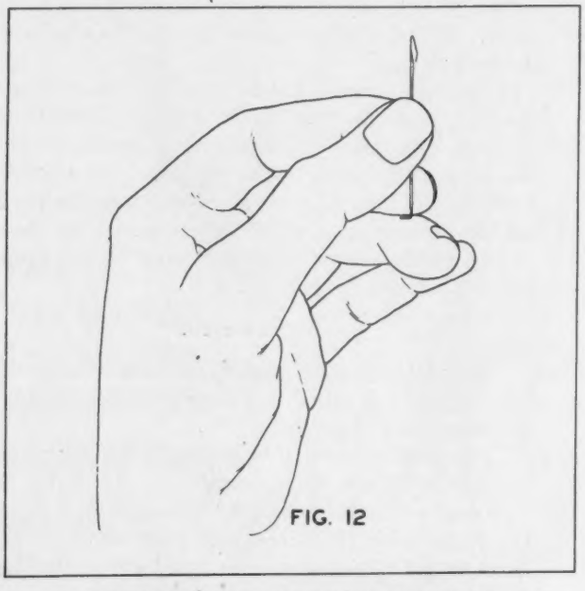

FIG. 12

INSPECTING THE HEIGHT OF BEARD.

Here the needle is held in the left hand and viewed from the side. The correct height of the beard may be ascertained by passing the side of another needle beneath the point of the beard.

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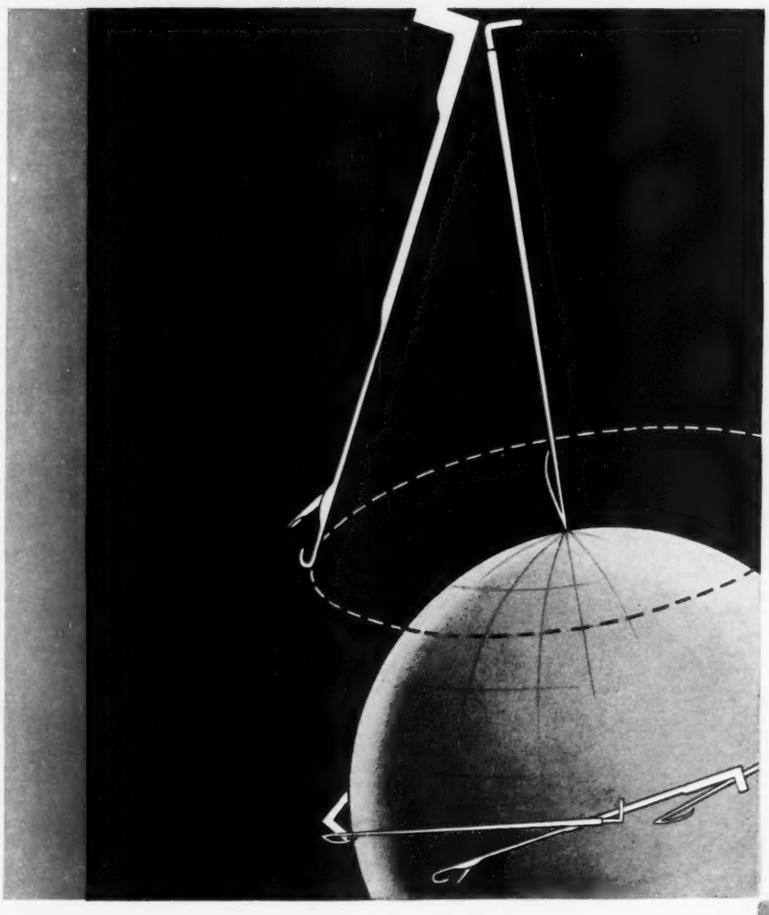

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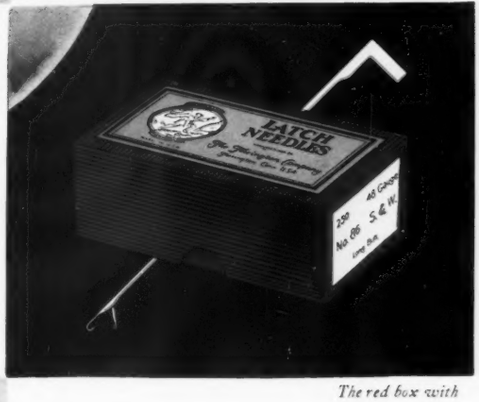

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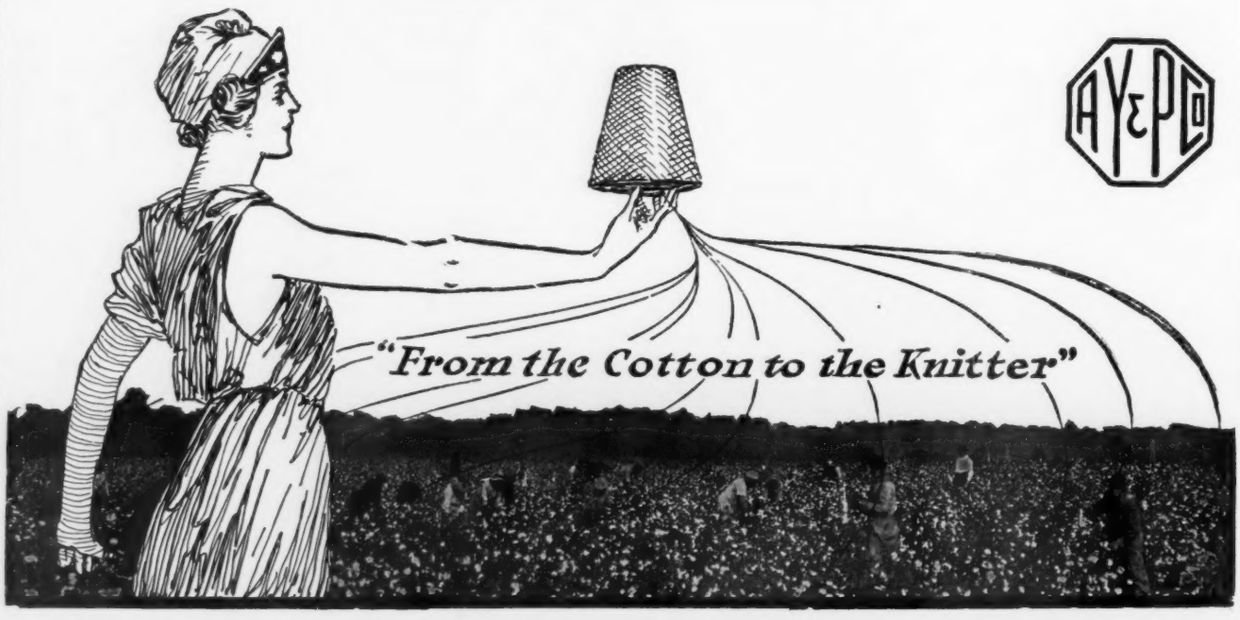

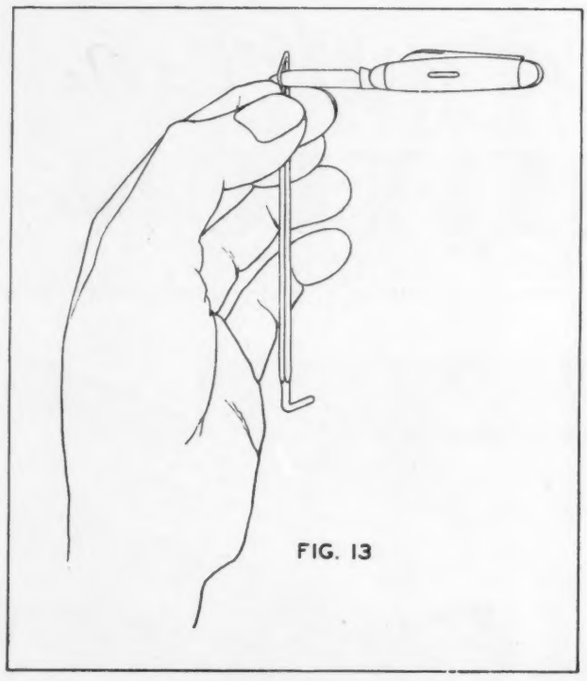

LOWERING THE BEARD.

This is done by pressing the point of the beard into the groove with the thumb nail of the left hand and inserting the point of a knife blade between the beard and stem and giving the knife a slight turn.

knife between the beard and stem and turning the blade so as to raise the beard at the center. This will throw the point downward. (See Fig. 13).

In some instances the arc of the head is too large, which holds the beard too high, but this is not often the case. Closing the head by gripping the head with the pliers in order to lower the beard is bad practice and should be done only when necessary, as a sharp bend in the head weakens the head and causes the beards to break off.

With the method as outlined I wish to call the special attention of the reader to the fact that the pliers are a tool for holding the needle while the needle is being straightened by bending or pliering the needle with the fingers. The only place the pliers are used for this latter purpose is on the beard.

If we have followed the different steps as outlined correctly, we should now have a straight needle. However, to assure ourselves of this fact, we must make the necessary inspections, or rather reinspections, for what we really do is repeat the steps as outlined by Figs. 1, 3, 7, 9 and 10.

We first, as shown by Fig. 1, see that the *back* of the needle is perfectly straight; next, as illustrated by Fig. 3, we see that the *side* is straight; then, as will be seen by Fig. 7, we inspect the *hang of the head;* and finally, we make the inspections illustrated by Figs. 9 and 10 to make sure that the *beard* is okeh. All of the other figures represent the process of straightening.

While there are many other methods, probably just as effective, in straightening needles, I have found this four-step method very simple and easy to explain to the learner and easy for him to understand. It has proven very satisfactory in standardizing needles and removing a lot of friction between knitters because of disagreement about needles.

Spacing and lining needles in the bar is an entirely separate operation and should be treated as such. It is just as important as needle straightening, and every knitter should be given a special course of instruction on this subject with several hours of practice.

Full-Fashioned Exchange Formed.

JULIAN ARMSTRONG, Chicago, director of organization of the proposed Full-Fashioned Exchange by which it is hoped to minimize losses from overproduction and a general variety of trade abuses, stated at the several meetings of manufacturers in New York, Philadelphia and Reading that there ought to be a membership of 150 mills at the start of the organization's activities. About 75 mill executives attended the meeting in Philadelphia, 30 in New York, and 51 in Reading. Some of these had paid $200 each as their contribution to the underwriting fund, this sum to be deducted from their first payment for entrance fee or dues upon completion of the organization, which he hopes to effect by January.

The Exchange as its plans were outlined at the various preliminary meetings, might be compared to the United States Steel Corporation, so far as relates to effectiveness in maintaining stability, with a membership equal to 50 per cent of the industry, assuming the members co-operated as it is planned to have them function; and in scope it is comparable in a way to commodities exchanges, in that, Mr. Armstrong states, the charter, to be issued in Delaware, would permit it to trade on the floor, after the manner of the grain, cotton and National Raw Silk exchanges. It would buy and sell distress hosiery stocks, handling them in a way calculated to cause practically no market disturbance. The exchange would, according to plans as described, be authorized to buy and scrap obsolete full-fashioned machinery or dispose of it in any way by which it would be removed from competition.

According to Mr. Armstrong's rough outline of the organization and its activities, it should have in its treasury not less than $50,000 to $75,000. The cost of conducting the open price exchange and maintaining an exchange of information whereby members might at all times obtain a true picture of market conditions, would amount to considerable, and the annual dues, for the larger mills, might run into more than $1000 per member—much more for some concerns and not a great deal less for any. By late in October, probably, detailed information will be available to manufacturers contemplating membership, this embracing those who have paid the $200 per member into the underwriting fund. Pending actual enrollment, matters pertaining to completion of organization are in the hands of Mr. Armstrong and an organization committee, which consists of the following:

Gustav Thun, chairman, the Berkshire Knitting Mills.
William Meyer, secretary, Apex Hosiery Co.
G. C. Aberle, chairman the Philadelphia group, the H. C. Aberle Co.
M. A. Freschl, Holeproof Hosiery Co.
Laurance Mayer, Julius Kayser & Co.
John K. Voehringer, Mock, Judson, Voehringer Co.
Garnett Andrews, Richmond (Ga.) Hosiery Mills.
Nathaniel Judson, Mock, Judson, Voehringer Co.
George E. Rutledge, treasurer, Wayne Knitting Mills.

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THERE is more than one way to get ahead of competition. Increasing the *volume* of production *without adding to costs* is decidedly effective.

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As it is constructed of the finest materials, in the scientific Willcox & Gibbs' way, the Feldlock will give long and satisfactory service. Let us send you a copy of the illustrated Feldlock booklet.

Write our Home Office for samples made on the Feldlock, or submit your own fabrics for sample purposes.

Sole United States and Canadian Agents for Cornely and Uniart Embroidery Machines.

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Quality production demands the use of genuine W & G needles

How Is Streaking and Tucking Prevented?

Any readers who have experienced this difficulty are invited to answer this man's question.

EDITOR COTTON:

I would like very much to prevail upon some of the members of your discussion department to give me their methods of preventing streaking and tucking in the loose part of the stocking.

We have 220-needle Model K machines, using 70s/2 mercerized yarn, and aside from having a lot of trouble with tucking in the loose part of the stocking, we find that streaking is very pronounced.

I would certainly like to see some discussion along these lines in some early issue of your magazine.

CONTRIBUTOR No. 4832.

Desires Winding Solution Formula.

EDITOR COTTON:

I would like to submit the formula I am using for my winding solution and have some of the readers of COTTON tell me what is wrong with it. It must be that I just do not know how to use glycerine.

I use three pints of silk oil and two pounds of olive oil soap dissolved in 52 gallons of water. This solution is then mixed with a solution of five pounds of glycerine to 20 gallons of water.

I find that a sediment collects in the bottom of the jar containing the soaking solution and that this sediment is passed along in great part to the first trough. By the time the solution reaches the second trough I find that the solution is minus much of the sediment and by the time it reaches the third trough it is just about as it should be. However, the yarn that passes through the first trough is not treated anything nearly as it should be. Instead of getting an even penetration of the yarn, as should be the case, certain parts of the yarn collect the precipitate of the soaking solution, which, of course, causes this portion of the yarn to remain much wetter than the remaining portion of the yarn.

I have also noticed that at times the glycerine curdles upon the water in spots and that it goes upon the roll in the same way. Hence, when the yarn is passed over this roll, there will be certain parts of the yarn that will become practically saturated with glycerine.

If any of the readers of COTTON can offer me any helpful suggestions along this line, I will certainly be grateful for their help.

CONTRIBUTOR No. 4842.

We invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All accepted contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

What Causes Cut Threads in Anti-Run?

Another seamless machine problem on which your experience and ideas will be welcome. Send them to "Knitting Kinks."

EDITOR COTTON:

I would like to call upon some of the contributors to your "KNITTING KINKS" department for help.

We are using 70s/2 mercerized yarn on 220-needle Model K machines and are having a great deal of trouble with cutting in the anti-run portion of the hose. Sometimes we have as many as two or three stitches cut.

I would like to know if any of the readers of this department have ever had this trouble, and if they have, what remedy they applied and the success they had.

CONTRIBUTOR No. 4831.

Wants Method for Collecting Empty Cones.

Full-fashioned knitters are urged to send in their views and methods in response to this request.

EDITOR COTTON:

I would like for someone to give me a good method for full-fashioned knitters for collecting empty paper cones off of the machine. All of my knitters stack the cones end over end, and I find that considerable waste is incurred here as this makes it practically impossible to wind the remaining yarn from the cone. I realize that the amount left on the cone should be small, and in my case it generally is; however, I do not feel that any waste should be tolerated where it is possible to prevent it.

I would certainly like to find out just what are the methods some other knitters are using for collecting these cones.

CONTRIBUTOR No. 4843.

Trouble with Bent Latches.

Mills with experience on this problem are invited to suggest remedies for overcoming it.

EDITOR COTTON:

We are having trouble with our H H sinker reverse machines. We are having a large number of bent latches. The machine goes out of the welt into the rib and pulls the last 20 of the long needles and the first 20 of the short ones. The needles are pulled out against the throat plate on the right hand side. The result is we have some bent latches and some hooks pulled off. We make men's fancy half-hose. I would certainly appreciate some suggestions from some of the readers of COTTON as to some means of overcoming this difficulty.

CONTRIBUTOR NO. 4847.

Tints Causing Off-Shades.

EDITOR COTTON:

I am wondering if any other knitters of full-fashioned silk stockings have experienced any trouble with off-shades due to the difference in tints used by some throwsters to designate sizes.

I recently dyed up a batch that contained some stockings of a pink tint and others that were of a tint that was almost green. The dyeing on the stockings possessing the greenish tint was several shades darker than that on the stockings with the pink tint. Of course I notified the throwster of this immediately.

If anyone else has ever experienced any difficulty along this line, I would certainly enjoy hearing from them.

CONTRIBUTOR NO. 4844.

Improperly Twisted Knitting Yarns.

EDITOR COTTON:

I would like to know how many knitting mill men have had the trouble I have incurred lately with improperly twisted yarn. I have certainly had my share of it. It had appeared to me that the yarn has been getting worse here lately rather than improving.

It would certainly be a blessing to knitters if all spinners that make knitting yarns could only work in a knitting mill awhile and learn for themselves what properly twisted yarns really mean to the knitter and just how much endless agony improperly twisted yarns mean to him. If they could only do this, I don't believe we knitters would get nearly so many yarns that have too much twist one time and not enough the next.

I am making fancy rayon hose and I find that I have a lot of holes made when the transfer is made from top to leg, and I believe that in practically every case these holes are the result of loosely twisted yarn. Then, I have quite a few drop stitches which I attribute to yarn being too tightly twisted. My machines are 240-needle, Model K Scott & Williams machines.

I would certainly like to hear from some other knitters who have been experiencing difficulty along this same line.

CONTRIBUTOR NO. 4840.

Answer to Question on Dirty Sinker Rings.

This is a further discussion of this subject, which has been appearing in several recent issues. What are your ideas?

EDITOR COTTON:

This is in reply to a question recently asked by "CONTRIBUTOR NO. 4619," in which he stated that he had always had considerable trouble with his Scott and Williams K machines clogging up with lint around the grooves of the inside sinker ring, and that this caused streaked work. He said that his present method of taking care of this trouble is to clean out the cylinders at certain intervals when they become bad, and that he would like to know if there isn't some other method of preventing this trouble.

The writer agrees with the inquirer that trouble with these inside sinker rings is somewhat of a nuisance, as regards streaked work.

Only a few years ago, the machine manufacturers made a change from the old type sinker rings to the ones being used at present. This change was made on account of two conditions that existed, which were: (1) Lint wedging in the slots of the inside ring because of there being no outlet for the lint as it came off the yarns in the knitting process. (2) The condition spoken of by our inquirer, that is, lint accumulating in these slots and preventing the sinkers from getting a free throw, which, of course, causes streaks. This change proved an improvement, but it did not remedy the second evil spoken of. This new ring holds the needles straighter due to the walls around the outside ring, and with the use of the newer type sinker permits a spring band to hold the sinkers in an even position during the knitting process.

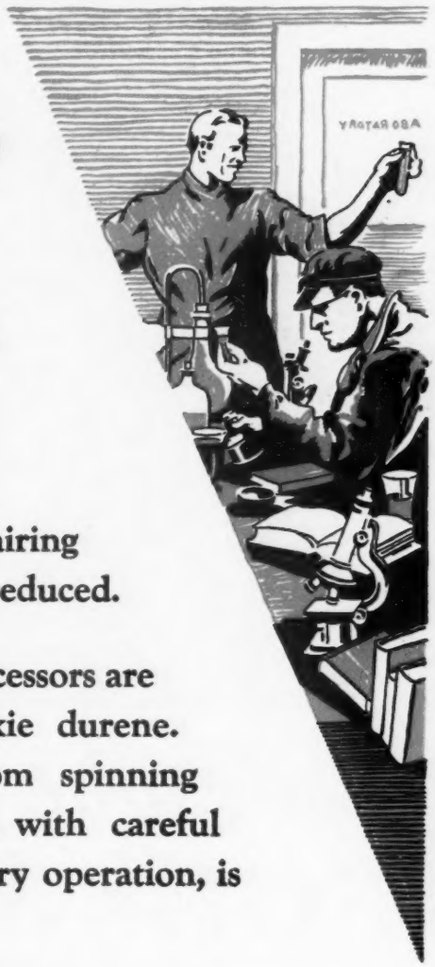
Naturally, cotton and durene yarns will pack a ring sooner than silk and rayon yarns, as fibers from the cotton and durene yarns will come off more freely during the knitting process.

I am a firm believer in leaving machines alone as long as they are running good, but when they become clogged up to such an extent that imperfect work results, I believe in cleaning them out. This cleaning consists of removing the cylinder from the machine, removing the sinkers in the outside ring, pushing the cylinder needle down below the level of the groove of the inside ring, and cleaning out the surplus lint that has collected. It is then a good idea to apply the air hose to remove whatever lint there is left. A check up of the condition of the walls of the rings and sinkers should be made.

Frequency of cleaning is governed by several things. If the machines are on cotton and durene yarns and running day and night, naturally they will have to be cleaned more often than if they were only on a day shift. We clean our machines on these yarns, as a rule, about once every three months. However, if they need it, they are cleaned oftener. This is determined by our head machinist.

Another method of cleaning is to use the air hose right on the machine. I do not advise this system,

Taking "Grief" Out of Yarn



WASTE, seconds, time lost in repairing machines—all these "griefs" can be reduced.

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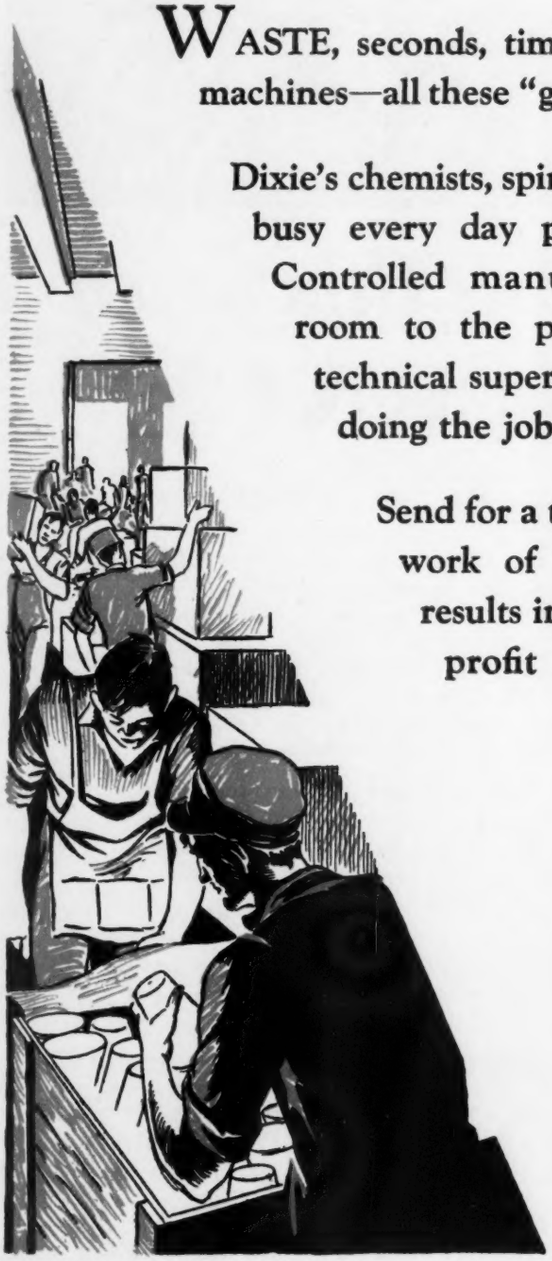

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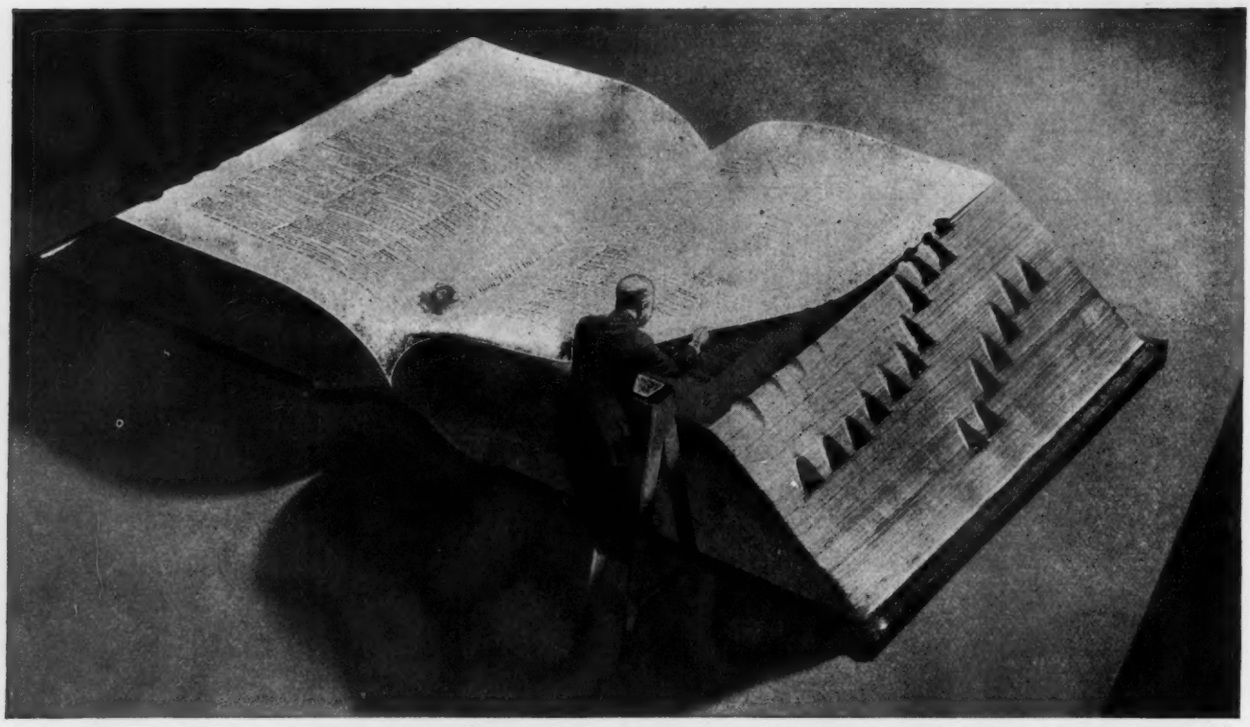

Let's take a look at this word
"OBSOLESCENCE"

Contrary to the dictionary, obsolescence is a *disease.* It affects all things mechanical in the same manner that various ailments disable those who have outlived their years of usefulness.

For us humans there is as yet no cure for obsolescence—we cannot replace old bones with new nor exchange a tottering gait for the proud stride of youth. Industry is more fortunate. It can keep itself young—in fact it cannot afford to grow old. Machines and methods too old for the pace of modern times must be discarded, scrapped, to make way for the improvements that keep plants young, productive and profitable.

In the Full-Fashioned Hosiery field much has been accomplished in the past five years to make a better product — faster and cheaper than ever thought possible. Mills that have kept abreast of these developments are enjoying profitable operation. Others, as you know, are experiencing difficulties.

Let us discuss these new developments with you now and explain how your equipment can be systematically modernized without a "major operation" on the treasury.

TEXTILE MACHINE WORKS
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The "READING"
Full-Fashioned Knitting Machine

though, due to the fact that it results in oily work, does not give good results, and sometimes causes mechanical trouble on account of needle butts or lint being blown into the mechanical parts of the machine.

Great care should be exercised in choosing an oil to use, for an oil which is too heavy and sticky, not only results in improper lubrication, but prevents the fibers from dropping freely as they are thrown off of the yarns. This causes an accumulation of the fibers in a rather short time. The very best grade of oil should be used. One which runs freely, yet lubricates as it should.

Another great help that I have found is to run the cotton and durene yarns through a yarn lubricator, using a special lubricating oil for the purpose. These can be adjusted so that very little tension is applied, so that it does not interfere at the knitting process.

CONTRIBUTOR NO. 4767.

What Causes This Trouble?

EDITOR COTTON:

We are making men's fancy rayon hose, using 200 denier rayon with 80s/2 emonize yarn, and are having quite a bit of trouble with our wrap stitches. The trouble seems to be in the yarn changes. We experience cut threads here in many instances. Our machines are of the 220-needle, Model K Scott & Williams type. I thought that perhaps some of your good readers could offer me some constructive suggestions along this line. If so, they will certainly be appreciated.

CONTRIBUTOR NO. 4841.

Off Shades.

EDITOR COTTON:

I have often wondered just how many mills are troubled with off shades and what most of them have attributed this difficulty to, as well as the remedies they applied for eliminating the defect. We had considerable trouble with off shades for some time, and for a while we were quite puzzled as to the cause.

However, after conducting a very thorough investigation to find the cause of the trouble, we finally discovered that this cropped out mostly when we would dye up batches of hosiery that consisted of some hose that were knit up the same day and some that were knit a week or so previous to dyeing. In some cases there was a very marked difference in the shades of the two. The hose that were knit up quite awhile before dyeing were usually several shades lighter than those dyed on the same day they were knit.

I think this might be attributed to several different things, chief among these being that the hose that are allowed to remain in the stock room for some time become excessively dry and the gum on the silk hardens to such an extent that in dyeing the yarn does not take up the dye as it should. Then too, I believe that the gum in being exposed to the dry atmosphere oxidizes to such an extent that it has a very deteriorating effect upon the yarn. I have noticed in a number of cases that yarn kept in the store room for some time would become rather rancid. When hose are in such a condition they just will not dye the same shade, when dyed in the same batch, as hose that have just been knit.

I believe that another cause of uneven shades here is due to the fact that there is generally quite a difference in the yarn that is used in knitting up a lot of hose, say one day and the yarn used in knitting up a lot two weeks later.

I have not seen any discussion of off shades in any recent issue of COTTON, and I would certainly like to see some discussion of this important subject soon. A lot of remedies that could be offered might seem simple to those able to offer them, but to a large number of us they might be life savers.

CONTRIBUTOR NO. 4836.

Among the Knitting Mills

MAY HOSIERY MILLS, INC., Burlington, N. C., recently started an expansion program which will include installing additional machines in the full fashioned hosiery department.

Perfection Hosiery Mills, Inc., Burlington, N. C., which were destroyed by fire last March have been rebuilt.

Elliott Knitting Mills, Cawtawba, N. C., have awarded contract to W. A. Setzer for a one story addition to their plant. The mills have been running full capacity day and night, but the addition will permit them to eliminate the night shift.

Contract for the construction of a new building and boiler house at the Corinth Hosiery Mills, Corinth, Miss., has been awarded to H. A. McGuire & Co., of Memphis, Tenn.

It was recently announced that the moving of machinery of the Mock, Judson, Voehringer Co., from Philadelphia to Greensboro, N. C., has just about been completed. When this machinery is put into operation, the production of the plant will be increased approximately 20 per cent, and 300 workers will be added. It is stated that these additions to the Greensboro plant will give this plant an investment of approximately $1,500,000.

O'Brien Hosiery Mills, Winston-Salem, N. C., manufacturers of half hose, have doubled production by purchasing additional split-foot machines.

M. C. Holderfield, of High Point, N. C., is reported opening a hosiery mill in Star, N. C. It is stated 25 knitting machines have already been installed. The knitting department will be opened at once.

It was recently announced that 100 machines have been started at Inspiration Hosiery Mills, Inc., Wytheville, Va., which is a subsidiary of Paul Knitting Mills, Inc., of Pulaski, Va.

Rex Tex Hosiery Mill, Kingsport, Tenn., has been acquired by Milton Silver, of High Point, N. C., and will be operated under the name of Silver Knit Hosiery Mills. Plans are to increase the capacity of the plant later. W. F. Hedges is general manager.

Lyerly Full Fashioned Hosiery Mill, Hickory, N. C., is having its plant equipped with Bahnson humidifiers. This equipment is furnished by Bahnson Co., Winston Salem, N. C.

It is reported that Tuscaloosa Hosiery Mills, Tuscaloosa, Ala., are stepping up production at their plant, and are said to be arranging for resumption of full time manufacturing schedule this fall.

Ellis Silk Hosiery Co., Charlotte, N. C., has been reported installing new hosiery machinery in its plant.

The KNIT GOODS MARKETS

AN UPWARD TURN in the wholesale markets for hosiery became apparent early in September. It seems to have been felt first in a better flow of orders to full-fashioned mills selling their nationally-advertised brands to the retail trade. This was the beginning of a movement among the larger stores to fill out stocks which had been much broken as to assortments during the dull summer trading. The vacation throngs were returning and juniors being outfitted for school. Otherwise there appeared on the surface nothing upon which to pin an explanation for a turn for the better.

Volume business for mills generally was expected late in September to attain satisfactory proportions in October, for besides placing orders for meeting current needs, distributors were making their selections for the holiday shopping trade. For a time there appeared weakness in matter of dealer confidence in prices, and but for the fact Fall was just around the corner, there undoubtedly would have been a prolonging of the holdback policy. Several times since Spring when it appeared prices were scraping bottom, department stores uncovered weak spots among sellers and still lower quotations were being heralded, until, shortly before the end of August, the Berkshire Knitting mills and the Apex Hosiery Co. came out with radically lower quotations. This was believed at the time to have put an end to orderly downward revisions, while it was not doubted that distress lots might continue to come on the market, occasionally from unexpected sources.

"We believe manufacturers' prices for silk full-fashioned hosiery are fair to the dealers, lower, really than manufacturers ought to be expected to accept," said one of the better known buyers of large quantities for department store use, "but if any manufacturer offers us hosiery at prices we might know meant loss for him, we would give him the preference, all other things in regard to the goods being equal. We do not believe in trying to force lower than present list prices, but we believe we are justified in buying on the most advantageous terms possible."

This probably expresses the way some of the buyers with a conscience feel toward manufacturers and prices. It therefore is up to manufacturers to steady the markets, so far as possible, by not knowingly quoting under the reasonable prices of a rival. According to a trustworthy report, a 10,000 dozen order for 42-gauge silk chiffons at $7.50 a dozen was declined by a New York mill agent.

Although, according to a survey by the Textile Machine Works, covering distribution of silk full-fashioned hose, for the last three years, 54.12 per cent of the 1929 business was booked during the last six months, a number of retailers might be quoted as saying they "made more money during the first six months than in any six months in many years." They had bought steadily in a declining market and, in great extent, adhered to previous prices, the meeting of which is illustrated in a transaction with a merchant in Seattle, Wash., who, according to documentary evidence, paid a fraction less than $9 a dozen for 45-gauge four-thread silk with picot, ticketed them $1.95 a pair and got away with that price. A Propper-McCallum ingrain silk number with picot sells to retailers for $14.50 a dozen and passes over the counter for $1.95 a pair—the identical price for which the Seattle dealer sold 45-gauge of unidentified make which cost him $9 outside.

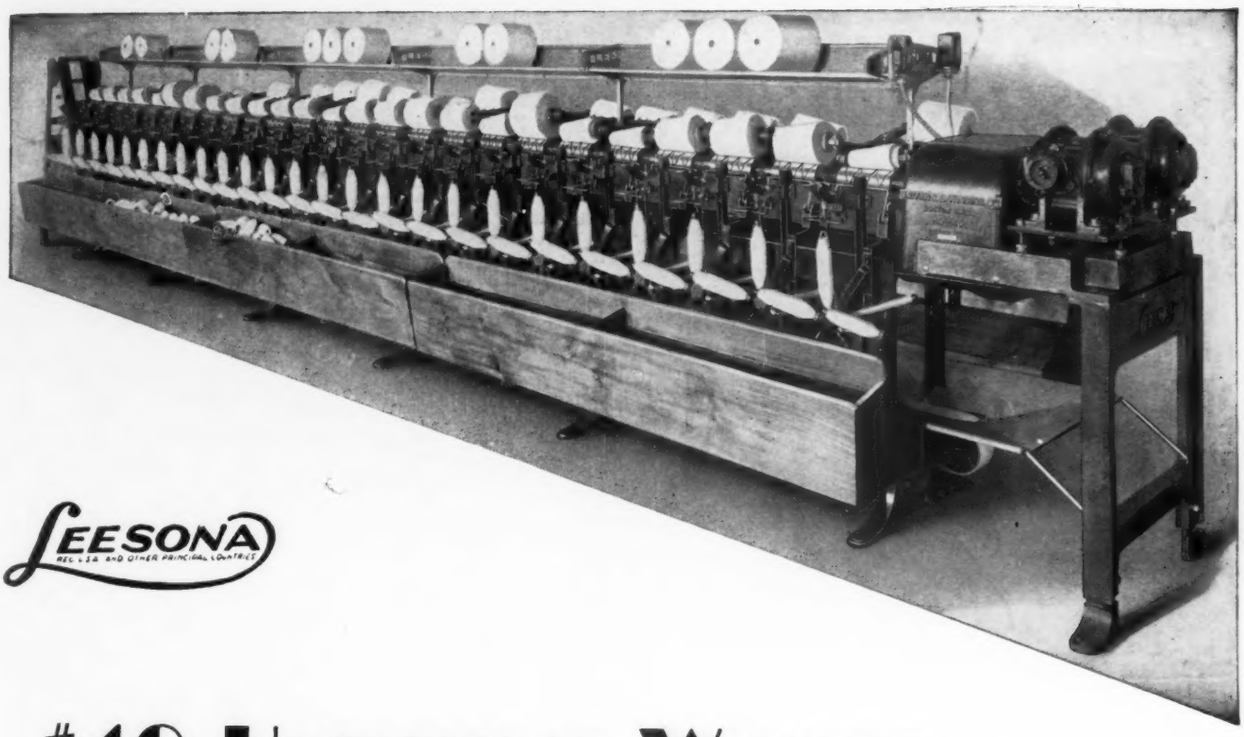
The Frank & Seeder Co., department store in Philadelphia last month ran a special sale of silk hosiery at what was believed the lowest price at which comparable silk stockings ever were sold in an American store. The price was 69 cents for a silk to top chiffon with French heel and mercerized foot. Every pair was sold under a guarantee of being first quality and full length and width. The lot was in nine new fall colors and was exploited as having been bought from a Philadelphia mill.

Often the low prices heard for standard silk full-fashioned stockings, while legitimate, in a sense, are misleading, and carry no idea of market value. For example, it has been possible to sell to some stores square heel hose at prices accepted for the French heel construction of standard build. There are in-

More About Single-Unit Machines

APPLICATION will be made shortly for a patent for a single unit full-fashioned hosiery knitting machine designed by Guido Blechschmidt, formerly filling an important position in the mechanical department of the full-fashioned mill of Oscar Nebel, Inc., Hatboro, Pa. Mr. Blechschmidt, who withdrew from the Nebel organization last January, since has perfected his device for attachment to leggers for producing completed stockings by a single operation, it is stated, and four 45-gauge machines are to be set up in the next few weeks in a new factory building in the suburbs of Philadelphia, where the inventor says, at least one will be in practical operation some time in early Fall. He is rated an expert mechanic, skilled not only in knitting but in dismantling and erecting full-fashioned machines.

The Oliver-Gray single unit machine, which represents a combination of the principles worked out by Wilfrid Gray, of the Gray Line Hosiery Co., formerly of the Largman Gray Co., and James and Thomas A. Oliver, the Oliver Knitting Co., Inc., is to be given a demonstration along commercial lines some time in October, it is stated by Mr. Gray. Another single unit machine, that of the Holyoke (Mass.) Silk Hosiery Co., is in production, and has been for some weeks, and samples of the product are being shown in some of the large stores. The company's ingrain number, intended to sell for $2.95 a pair, although not on the counter in a department store to which samples have been submitted, is pronounced by the buyer "a success as illustrating the possibilities of knitting full-fashioned hosiery complete on one machine, eliminating topping." The buyer says he was "especially impressed with the shaping of the heel".



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Maximum Number of Spindles per Square Foot of Floor Space

The design of the new Monarch Twister incorporates the results of 65 years of Atwood experience in building the twisters that have thrown the bulk of the world's silk. It is designed and built in Atwood shops to Atwood's standards.

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4717-A

stances of tram silk goods fetching as much as dealers are paying for grenadine, which costs mills 25 cents a dozen royalty, to say nothing of a higher knitting cost. Some buyers predict that the distress picot tops of the near future will be the colored stitch effect, since, others assert, the plain picot is being given the preference. This may be, but it is true also that the self color picot has been on the market for a year or more and it is not of record that colored picots have lost in consumer favor. Its passing some day should cause no surprise. Even black heels for the fine gauge seamless silks, say producers of some of the better known lines, and who firmly believe they will return to favor.

Dollar Silk Full-Fashioned a Strong Item.

The sales management of a Philadelphia mill specializing in 45-gauge medium service weight silk hose with lisle hem regards dollar stockings of full measure of quality and standard construction the better guess in the present market. It yields a small profit per unit, the sales conductor says, but is a ready seller for good store account. This mill some time ago discontinued knitting 45-gauge four thread, finding demand not sufficient, but now regards it a pivotal number.

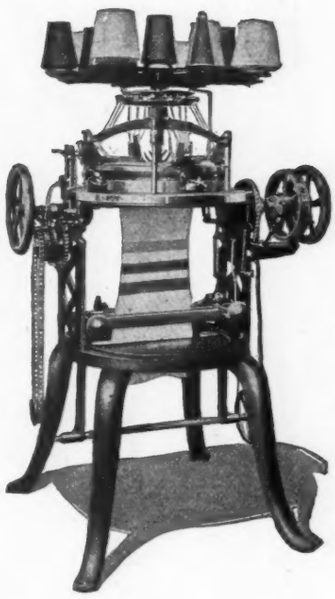
One of the few Philadelphia women's shops rated "exclusive" has sold quantities of dollar sheer service weight lisle top silk full-fashioned stockings for three years past, and is featuring the same mill line which it originally put on sale. At the start the store's profit was very thin, the stocking being carried simply for competing with a few establishments which featured the dollar price but were not sticklers for high quality. The exclusive shop now is putting out a better stocking and paying less money for it, while still maintaining the dollar price and no questions asked. The point is that it is taking down a profit that compensates for the narrow markup of two to three years ago, the manufacturer holding the account through severe competition.

Dull Hose May Supercede Tram Silk.

The Herron Hosiery Co., Philadelphia, manufacturer of Blue Heron brand full-fashioned, sold to retailers direct, is so impressed with its sales of crepe hosiery, selling for $1.95 a pair, says the general manager, Joseph A. Harron, that it appears dull hose will eventually supercede tram silk entirely. Mr. Harron was among the first to introduce true crepe after the Westcott Hosiery Mills of Georgia started the trade with its patent covering grenadine hose, which is now being made by around seventy manufacturers under royalty, while a number make a dull stocking by means of a twist which they declare does not infringe, a matter apparently to be determined in some court.

Another Georgia manufacturer, the Archer Hosiery Mills, producing a 320-needle grenadine which sells for one dollar a pair and which may play an important part in keeping seamles hosiery on the map a while longer, notwithstanding the seamless prices of two years ago now are the price of some

CIRCULAR BRINTON KNITTING MACHINES



Rib and Sinker Top Machines for Plain and Fancy effects.

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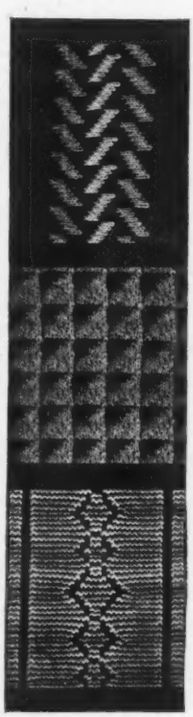

assure the success of your merchandise by making them on Brinton's. They will perform up to your expectations if Brinton's knit them.

Brinton Knitting Machines are the biggest backing that you can give your sales force—the biggest help to your jobbers and retailers—the biggest value to the ultimate consumer.

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NATURAL, BLEACHED AND COLORED

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ABERFOYLE MANUFACTURING COMPANY

Representatives in All the Principal Countries of the World

right good full fashioned—some of 42-gauge and finer. A Philadelphia manufacturer of 300-needle tram silk is getting $4 a dozen for four-thread silk to top and $4.75 for seven-thread silk with cotton top. This manufacturer says he could get a dollar a dozen more for grenadine, to sell at 85 cents a pair. The four-thread goes over the counter for 55 cents. The service weight stocking, the equivalent in needles per inch to full-fashioned of 42-gauge, is sold at the counter for 65 cents. The mill is moderately busy with its 300-needle equipment, while coarser gauge machines are all idle.

A seamless mill in Reading which seldom departs from the regular schedule — except to increase the number of hours—is feeling the effect of the sinking spell for women's seamless silks and, the management states, its principal business now is in a rayon-plaited number, which is contrary to conditions in the markets for this type of stocking. In fact, making comparison with last year all seamless lines for women sustained their hardest jolt in July, according to reports of 341 identical mills to the Department of Commerce, when production of straight silk was more than 72 per cent below that of the corresponding month of last year, while straight rayon slipped by more than 47 per cent.

Production of silk and rayon in combination seems to have dropped by around 83 per cent, which probably is the more sensational showing in the statistics for July. Silk and cotton and rayon and wool combinations made slight gains in the seamless division, while rayon and cotton loses 64 per cent in the comparison with July 1929.

Losses in production in the full-fashioned group were approximately 20 per cent for silk, 62 per cent for straight rayon and 63 per cent for silk rayon combination. Significant is the fact that although seamless rayon and cotton output fell off 64 per cent, the same combination in full-fashioned gained almost 400 per cent, while output of full-fashioned silk-cotton combination leaped from 533 dozens in July last year to 17,910 dozens this year.

While reported production, all classes, in July this year dropped to 3,228,655 dozens from 4,485,619 dozens in the corresponding month of 1929, unfilled orders at the end of the month showed a decline from 5,916,300 dozens to 3,212,043. The falling off in net shipments and orders booked were in relatively less per cent. Better showings generally are made in infants' and athletic hose than in any of the adult lines, and juvenile hose presents some encouragements. Outstanding in the figures relating to men's half hose is an increased output of straight rayon and a severe falling back in silk-rayon combination.

It is noted in Department of Commerce export figures that in a very recent month exportations of seamless silk were 2604 dozens comparing with 38,301 dozens of full-fashioned.

Manufacturers are giving more attention to boys' stockings, presenting them in golf length with plain English ribbed leg and artistically ribbed cuffs turned over. Seven-eighth length is said among mill agents to be one of the more active items in child-

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Stripper X

It leaves your hose with a soft and full-of-life feel. It will not injure the most delicate and sheer numbers you make.

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ren's stockings. Some say there is a somewhat pronounced drift—in sentiment—to lisle from rayon in combination.

In women's wool lines there is reported some interest in full-fashioned spun silk in combination, and it is stated several manufacturers are finding good use this fall for 39-gauge machines for knitting this style of stocking.

Double Job and Two Shifts General In Philadelphia-Reading Area

WITH FULL-FASHIONED hosiery mills in the Philadelphia and Reading sections employing one knitter for two or more leggers and operating plants with two shifts of operatives, it is pointed out by the trade in Pennsylvania, cost of production has been brought to the lowest since 1914-15. From this it is deduced that prices are reasonably safe from further reductions and that as this dawns upon the minds of distributors, buying will be among more nearly normal lines. Of two mills in the Philadelphia area, one is operating with two 7½-hour shifts and the other with two seven-hour turns. The latter, in addition, runs footers five hours nights and is giving employment to 40 persons who otherwise probably would have no employment. Both mills sell directly to retailers and are supplying their regular trade, it is stated by the managements.

Several full-fashioned mills in the same territory which are maintaining 15 to 20 hour schedules for two shifts are filling large orders from chain store organizations and catalog houses.

Of a small group of mills at Willow Grove, adjacent to Philadelphia, one, with two leggers and one footer, is reported "making some money" on continuous day and night operation. Another, the Zabel Full-Fashioned Hosiery Co., with a battery of 12 machines, reports enough orders to keep the plant running full until December.

The Blue Line Hosiery Mills, Denver, in the Reading sector, organized two years ago and operating 15 machines of 52-and 45-gauge and selling to retailers, reports production steady, to capacity. The company's lowest price number sells to retailers for $12.50 a dozen.

With Bemberg full-fashioned cotton top hosiery selling in department stores regularly for 65 cents a pair, it is thought among manufacturers that unless jobbers find a market for this type of Bemberg—and it is believed they will—it might have difficulty in competing with either full-fashioned or seamless silk. Yet Bemberg at 65 cents is rated by many buyers for the trade as the ideal stocking for women who buy for price and service and are not unwilling to lay silk aside. Bemberg and seamless silk in service weight, each with lisle to hem, sell at the identical price—65 cents a pair. Bemberg at this price by retailers provides for about the same relative margin of profit as seamless silk of 300 needles to sell for 55 cents. So, it is pointed out, jobbers can, if they really want to sell full-fashioned hosiery, find some rather good outlets for Bemberg stockings.

SCHUBERT & SALZER
HIGH SPEED
TYPE H.S.L.
65 COURSES PER MINUTE
FULL FASHIONED HOSIERY MACHINES

GROWTH--in Your Business and in ours!

The ever-increasing use of Schubert & Salzer Full Fashioned Hosiery Machines, not only in the United States, but in every textile country in the world, is not only satisfying to us, but satisfying to users. Because - -

More efficient machines, producing better fabric, mean growth in your business as well as in ours. "The proof of the pudding is in the eating"-let us arrange a demonstration for you.

Sold and Serviced in the U. S. A. by
Alfred Hofmann
INCORPORATED
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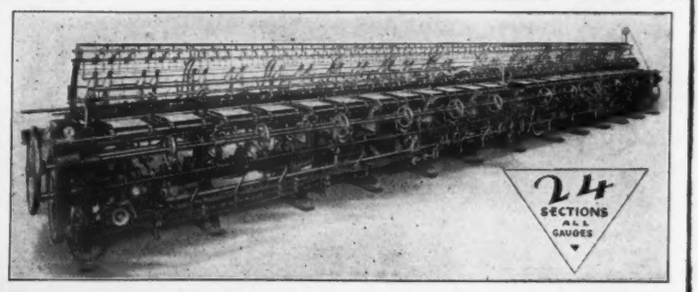

King Cotton visits the realm of King Cosmetic

THEY tell a story of how King Cotton once paid a visit to King Cosmetic. Long and earnestly the two monarchs conferred. And good King Cotton learned a great lesson from King Cosmetic. It was the lesson of trademarking and identification. And it was destined to help bring new prosperity to the land of Cotton—just as it had helped bring high fortune to the subjects of King Cosmetic.

❖ ❖ ❖

TODAY YOU WILL FIND comparatively few face powders or perfumes that are unbranded. Long ago the makers of cosmetics realized the value of trademarking and identification. On the other hand, you *will* find unbranded cottons—but it is significant that *you will not find as many today as you would have found a year ago.*

The fact is that more and more cotton manufacturers are trademarking their merchandise. The reasons? First—because in the last few years the consumer demand for identified, styled cottons has jumped tremendously. Second—because identification of their products has enabled manufacturers to make their advertising truly effective. Third—because substitution of inferior goods is positively prevented.

Since 1903 Kaumagraph has been trademarking headquarters for the textile and allied industries. It is natural therefore that since the new era of cotton prosperity, many cotton goods houses have enlisted Kaumagraph's aid in designing a trademark... and applying it to their products with Kaumagraph Dry Transfers.

If you are considering the advisability of trademarking, Kaumagraph would be glad to work with you. Our years of experience, our Research Laboratory, our service department... are at *your* service. Write for additional information—or for a representative.

❖ ❖ ❖

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Also at 14 Lloyd's House, Manchester, Eng.

Underwear Jobbers Try to Convince Retailers Prices for Heavyweights Will Be No Lower

THERE WILL BE no further reductions this year in prices for heavy weight cotton ribbed underwear, is the message some of the important jobbers have been broadcasting to retailers in efforts to loosen up orders, so that neither wholesaler nor retailer will be caught short of the goods once winter underwear weather sets in. Among the better known buyers for the trade admitting there is a strong probability of a shortage among wholesales is Frank W. Slaughter, manager of the underwear department of Sullivan Smythfield Co., Philadelphia.

Manufacturers have made no money on heavy weight underwear this year, says Mr. Slaughter, and notwithstanding cotton is much lower than when they named their prices for the distribution season, they will do little better than break even on current market prices for their product. As retailers persisted in postponing their purchases until fall, jobbers made commitments very conservatively, and may not have normal stocks at any time during the remainder of the year. Mills, it is recalled, were idle during a great part of the spring and summer, running up practically no stock. They operated plants, when they had orders and closed them when there were no more orders. So, in the event of a scarcity of desirable underwear among wholesale distributors, the latter probably would be able to procure prompt shipment of quantities of moment, leaving some to take what others reject and numbers of retailers in the same boat. This is a possibility such as is foreseen by buyers, among them Mr. Slaughter.

Manufacturers of men's light weight underwear kept jobbers waiting until the third week in September for their prices for 1931 lines. In some respects the new prices were a surprise, being from five to 10 per cent below the recent quotations for the current season. Many of the mill representatives were on the road on the day the new prices were made public, and it is understood a fair amount of business was taken for several of the leading mills, and that initial orders generally will be placed more promptly than was the case with heavy weights. The fact that some mills were quoting down before the official announcement of revisions made little difference to those who finally set the pace. The reductions are regarded as conforming to the declines in cotton and prices are said to be accepted generally as fair.

Mills have orders during the early part of the year or stack up goods for the convenience of retailers dodging a merchant's responsibility. Manufacturers know from experience that goods in stock are plaything for price sharpshooters, and therefore work on orders and hold overruns down to an assured safe level. Retailers who always have been able to buy from stock appear assuming to feel they can do so this year and in years to come. So, say certain manufacturers, it is time to correct the impression that they are going to continue as banker and warehouse merchants. They have had their losses, on maintaining idle plants, and it appears to be felt that it might be not a bad arrangement to play for bare markets and, when buyers final-

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FOR those 20 to 75 pound lots—that's where the American Underdriven Extractor comes in handy. The basket is placed at just the right height to permit quick and easy loading and unloading; the motor drive makes the machine self-contained, and ready to go at any minute; and it requires so little floor space you can fit it in any place. Write for details.

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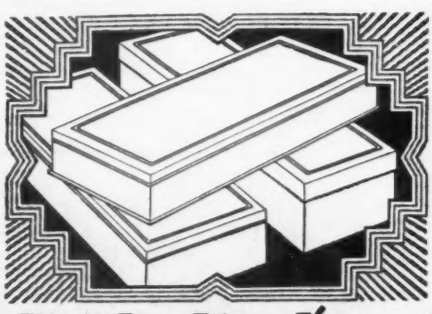

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for all TEXTILE PRODUCTS

Old Dominion paper boxes are distinctly different from any boxes you have ever used. In them you get that certain "individuality" that makes them stand out above all others. Especially made to fit your products and printed in any color combination with your trade-mark or special design. Our five centrally located Southern plants can give you a quick service and low freight rates. Write our nearest plant for samples and quotations.

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quality OLD DOMINION **Paper Boxes**

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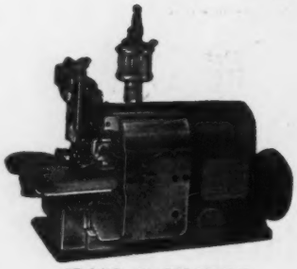
HIGH SPEED TRIMMING AND OVERSEAMING, OVEREDGING AND SHELL STITCH MACHINES FOR USE ON KNITTED AND WOVEN FABRICS OF ALL KINDS

—— 200 VARIETIES FOR 200 PURPOSES ——



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STYLES 60-ABB and 60-D3B

For simultaneously trimming and joining ends of cotton, silk or woolen piece goods with a

FLAT BUTTED SEAM

Permits goods to pass through finishing machines, uninterrupted, for such operations as Shearing, Calendering, Mercerizing, Bleaching, Dyeing and Printing—with *remarkable saving*—both in labor and fabric.

Butted Seam, natural size, made by STYLE 60 ABB MACHINE on Cotton Goods which have been subsequently processed. The STYLE 60 D3B makes a similar though much wider seam designed for use on sleazy or loosely woven goods to insure holding.

OTHER RECENT DEVELOPMENTS—FOR THE RAYON TRADE

STYLE 60 RD —For a three-thread overedge finish, either straight or scalloped, on Rayon Bedspreads and other sleazy articles on which the ordinary edge finish will not hold.

STYLE 60 JDC—For two-thread FLAT SEAMING on Rayon Underwear.

Let Us Demonstrate the Work of These and Other Machines on Your Own Fabric.

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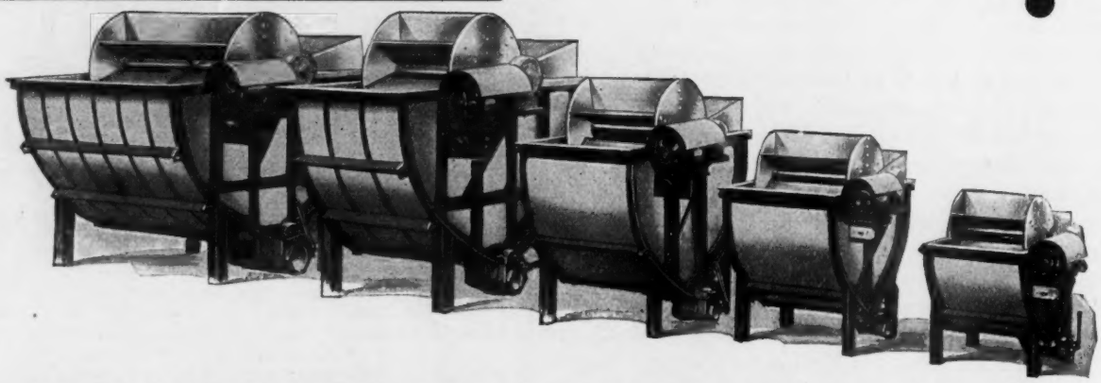

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These frames are made extra heavy and rigid to reduce vibration. Motor, belt or chain drive at your option. Capacities 5, 10, 25, 50 and 100 lb. sizes. Other sizes built to order.

Write today for price and delivery.

STRICKLAND PATTERN WORKS
Chattanooga, Tennessee

ly toe the mark, obtaining list prices, which would compensate in part for the enforced curtailment of output due to distributor backwardness.

A bare market would work to the advantage of all the trade, say some buyers for wholesale houses, for it would give assurance of surplus stocks, if there be any, going to the consumer. But so long as dealers feel there is any worthwhile carryover of heavy weights they may be expected to dicker for recessions equivalent to declines in operating costs as indicated in part by the present position of raw cotton. However, assuming that manufacturers will pursue the policy of stocking no goods and holding for list prices, there seems no doubt the winter weight situation is veering steadily toward their favor. Obviously, there is less concern just now over heavies than as relates to summer weights.

While there was heard some criticism of manufacturers who were regarded responsible for delay in naming prices for 1931 summer lines, it was the generally accepted view last month that no sales would be placed in jeopardy if the opening were postponed until October or, at any rate, until any remaining doubt as to the outcome for heavy weights has been disposed of. This has been the latest heavies season in many years, and is foreseen by some factors as a forerunner of a light season for summer lines.

If, as had been freely estimated in the trade, little more than 25 per cent of wholesalers' normal requirements for fall and winter had been bought up to early August, it follows that distributors would be little interested in light weights during the fall months, unless developments in the cotton exchanges indicated a stiffening in values of the raw fiber. In any event, it was predicted after the September cotton report was given to the public, that underwear buyers for the trade would find it convenient to make no commitments for future until after the report of October 8th had been digested.

Sweater Mills Under Pressure for Deliveries Declining Orders; Bathing Suit Mills Need Them

IN THE KNITTED OUTERWEAR INDUSTRY there is a fair stage of activity in the sweater and women's suits groups, and a waiting for orders in the bathing suit division. As early as the middle of September some of the sweater manufacturers were accepting cancellation of orders which they could not fill for satisfactory delivery. Such orders went by the board simply because buyers had too long withheld them. A few months before, the same mills were accepting cancellations rather than reduce order prices on the ground of slight declines in prices for worsted yarns. Numbers of the manufacturers of the better established lines made up practically nothing for stock. So, when weather changes put jobbers in a buying mood mill men were in position to decline some orders and accept some on the allotment plan. And last month many of the plants which had been on short time schedules or idle were operating full day and part night time.

There was no scarcity of ready-to-deliver sweaters when the change for the better was first felt in this industry, but they were not of the character of con-

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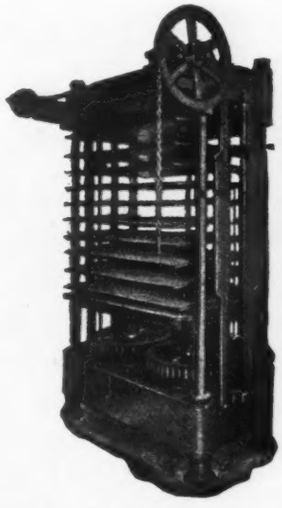
RELIANCE
Hot Plate Screw Press
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SPUN RAYON

Announcing a new spun rayon by Quissett Mill. Quitex Spun Rayon has a fashionable dull lustre and unusual strength—imparting to fabrics a new sales appeal.

There are many ways in which you may use Quitex to advantage in your textiles. Profitable results are assured with the Quissett reputation behind it.

Let us send you samples of Quitex Spun Rayon.

Quissett Mill
New Bedford, Mass.
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QUISSETT MEANS QUALITY

Franklin Machine Co.

Engineers—Founders—Machinists

Providence, R. I.

Machinery for Dyeing Rayon in the Skein
Textile Printing Machines
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Thousands of Fade-Ometers are today in service in the Textile Trade. These machines safeguard color fastness with an accuracy heretofore unknown. Through their use the color quality in cotton has become definitely determinable. The industry is specifying color permanence in Fade-Ometer Hours with absolute satisfaction to maker—buyer—and user. We want you to know the complete story of Fade-Ometer and its applications, if you are not already familiar with it. An interesting new booklet will be sent gladly on request.

Ask about Launder-Ometer — the Standard Machine for Laboratory Washing Tests—that gives as definite information about fading from laundering as Fade-Ometer gives about fading from sunlight.

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Perfect Factory Counting
Without mental effort
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Learn to Hate Dyed Menders
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MANUFACTURERS OF
Cotton Mercerized Tapes, Spool Tapes, Bindings and Narrow Fabrics for Underwear and other Trades.

struction the leading distributors were demanding. Some manufacturers had made the blunder of reducing standards although buying yarns at materially lower prices. Merchants held out for substantial recessions from last year's prices, and got them, but the call was for a stepping up in character of the garments and this they also got, until the mills in better repute began booking so much business, to be put through to delivery in so short time, that they turned back the proffered orders of buyers other than those rated "our best customers." Even at that, it has been possible to obtain acceptance of orders for low end type sweater coats. But competition in this division is keen and profits for mills are said to have been much narrowed.

For illustrating the extent of price declines from last year, a right good light weight worsted sweater that then was costing retailers $24 a dozen now is being delivered for $18 a dozen. This applies to an important mill which is regarded one of the key plants in the industry. It is the policy of some manufacturers who have made reductions to see to it that they are passed along to consumers, since it transpires that numbers of retailers battling for radical recessions pocket all of the increased profit. Instances are recorded, particularly in the Northwest, of stores taking down a margin of 150 per cent by adhering to 1929 prices for 1930 goods, which, it is pointed out by mill men, retards buying by the public and leaves manufacturers with nothing gained by the concessions they have made.

A great deal is being heard of the more general use of single worsted zephyr yarns for sweaters and two-ply for bathing suits, and it appears true, judging by reports of French system spinners being much busier, that more of zephyr yarns is going into knitted outerwear. But as the fabric, more especially in women's sweaters, is of lighter weight, the higher cost seems to be but slightly felt.

The larger volume of business in sweaters—men's women's and juvenile lines—is in general staples, demand still running strong for three or four solid colors. When it comes to fancies, the call is for smaller patterns, in conservative colors. It is regarded too late for any material style changes this year, these being left for the opening, several months hence, for 1931. Matched sets of sweater and golf hose are reported being stocked by some leading stores for the holiday trade. These sets in the better grades are priced in the range of $10 to $15 for retailing.

Although sweater buying by jobbers and retailers is several months late this year and it will be impossible for mills to get off their usual volume of production, there is prospect that, barring inability of manufacturers to make designated delivery, sales will fall not far behind those of 1929.

While bathing suits have gone through the formality of an opening, comparatively little business, aside from samples for road salesmen, is said to have been placed, and it appears to be the concensus that little if anything was gained by an opening in August. But by January-February, it is fully expected, bathing suit mills will be as hard pressed as sweater manufacturers now are and likely to be until well toward the end of December.

BONE-DRY UNSHRINKABLE WELL-FINISHED

HARD MAPLE HOSIERY BOARDS

Give you that much desired finish that cannot be obtained from any other than wooden boards.

You get the length, lustre, *feel* that the goods should have.

Our special finish is highly recommended for silk and wooden boards.

We serve the best mills—send a request for list and same will be forthcoming.

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STANDARDIZED SUNLIGHT

BUYERS—Sellers—Users of Cotton Textiles in any form—the world over—are coming to depend upon Fade-Ometer for an exact measure of color fastness to sunlight. Such tests accomplish in hours all that days and weeks of out-of-doors sunlight exposure can give and results are accurate and reproducible—independent of climate, season, and location. Thousands of Fade-Ometers are today safeguarding color fastness in the laboratories of the Textile Industry. If you are not fully acquainted with the work Fade-Ometer is doing, we urge that you send for our valuable new catalog. It should be in your business library. Write for it—tell us your color fastness problems.

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FOR THE SHIPPING ROOM

STENCIL MACHINES

OIL STENCIL PAPERS

A. J. BRADLEY MFG. CO.
101 BEEKMAN ST., NEW YORK

The YARN MARKET

Philadelphia, Pa., September 13th, 1930.

IT MAY BE RECALLED that in the report of last month attention was called to the fact that a good many buyers were trying to use small downward fluctuations in cotton quotations as an argument in obtaining consequent reductions in carded yarn rates. Very few spinners, however, gave ground to any further reductions. They pointed out that for the past several weeks they had been doing business on a 10 cents per pound basis for cotton. But continued reductions in the raw product quotations proved sufficient to cause a considerable number of spinners to weaken.

During the week beginning August 18th trading was fairly brisk, but it appears that the majority of orders were placed at prices that would net the spinners and dealers very small margins of profit. Carded yarn rates, in particular, were very unstable. They were adjusted almost daily, as lowered cotton quotations would cause spinners to become more responsive to inquiries sent them.

All buyers that were in the market for yarns were of a very cautious nature. Very few, if any, were acting upon hunches. The majority of buyers were placing orders only as they needed yarn, for they felt that they could cover their requirements on very short notice.

Prices, for the first time in several days, took an upward trend during the next week. This was attributed to a sudden flurry in cotton quotations. A number of sellers advanced their quotations to the basis of 20½ to 21 cents for 10s frame spun carded cones, ordinary quality of white yarn. Quite a few were rather skeptical as to the effect this would have upon buying.

This stiffening of prices was certainly welcomed by the majority of spinners, for it caused many spinners who recently have been entirely too responsive to inquiries to become more sensitive on the subject of prices. Few buyers were willing to plunge deeply into heavy orders, but a fair amount of buying was recorded.

The first of September was looked upon by some as the time when many distributors would unload a considerable number of contracts, delivery upon which had been held up on account of the pleas from manufacturers that their business was far below normal and that it was first necessary for them to rid themselves of their made up goods. They explained that just as soon as business picked up a little it would be possible for them to resume acceptance of yarn deliveries.

As time went on, of course market values receded quite a bit, and the difference in current prices and those in effect when the contracts were drawn up was the obstacle that caused consumers to further delay specifying shipping dates.

It was pointed out that these contracts could not be revoked, and that a degree of financial loss will have to be taken by all parties. It is said, however, that the loss will have to be taken by all parties. It is said, however, that the loss will have been distributed in more or less equitable fashion and that relations between yarn mills and their consumers will probably be more pleasant because of the demonstrated potency of the principle of give and take.

During the next week the Government's forecast of 14,340,000 bales failed to disturb yarn rates. Quite a few consumers endeavored to cover considerably ahead at lowered rates, but in the large number of cases they were very unsuccessful. Most spinners seemed to take a firm attitude, and many of them stated that they would delay increasing their spindle operations until prices appeared rather favorable. Conditions, so far as spinners and dealers were concerned, appeared to be more stable than they had been for some time.

Philadelphia prices on September 15th follow:

Single Skeins.

4s to 8s	19½	10s	20
12s	20½	14s	21
14s	21	16s	21½
20s	22	24s	25
26s	25½ @26	30s	26½ @27

Single Warps.

10s	20 @20½	12s	20½ @21
14s	21 @21½	16s	21½ @22
20s	22 @22½	26s	26
30s	27		

Two-Ply Skeins.

8s	20	10s	20½ @21
12s	21 @21½	14s	21½ @22
16s	22	20s	22½
24s	25	26s	26
30s	27	40s	35

Two-Ply Warps.

10s	21 @21½	12s	21½ @22
14s	22 @22½	16s	22½ @23
20s	23	24s	25 @25½
26s	26 @26½	30s	27 @27½
40s	36		

Frame Spun Carded Yarn on Cones—Cotton Hosiery Yarn.

8s	20	10s	20½ @21
12s	21 @21½	14s	21½ @22
16s	22	18s	22 @22½
20s	22½ @23	22s	23 @23½
24s	24 @24½	26s	25 @25½
30s	27½ @28	40s	35
30s dbl carded	32 @32½	30s tying in	27

Southern Two-Ply Combed Peeler Skeins and Warps.

8s to 16s	35	20s	36
24s	38	30s	41
40s	44	50s	49
60s	56	70s	66
80s	77		

Mercerized Yarns.

Single		Two-Ply	
30s	67	20s	51
36s	68	26s	52½
40s	70	30s	54
45s	73	36s	57
50s	76	40s	60
60s	85	50s	64
70s	1.00	60s	72
80s	1.12	70s	84
90s	1.50	80s	96
100s	1.80	90s	1.31
		100s	1.61

Mule Spun Carded Yarn on Cones.

10s	26	12s	26½
14s	27	16s	27½
18s	28	20s	28½
24s	31	26s	32
30s	33	40s	41

With the Publishers---

"The Value of New Equipment"

QUITE IN KEEPING with the evident trend of thought was the article on new equipment, by H. G. Beede, which appeared in the October issue of COTTON, for the southern operating executives, meeting in Spartanburg last month, adopted this as the theme of their main technical session.

The report of the discussions on this subject, by several mill men and an outstanding southern engineer, will be found elsewhere in the present issue. A careful study of the thoughts presented in these discussions is recommended as worthy and worthwhile for every progressive mill man.

It is interesting to note the similarity in the method with which COTTON, in Mr. Beede's October article, touched upon this subject, and the way it was developed at the Spartanburg meeting.

In line with this thought, the opportunity is presented to direct attention to a splendid possibility available to the executive who is interested in determining the value of new equipment in his case. Editorially, COTTON has recently presented many new ideas which have attracted considerable attention and which, we hope, have contributed to the advancement of the industry. There are more to come, such as studies of one-process picking and descriptions of economies effected through the use of material handling and conveying equipment, etc.

In addition to these features, and equally important to the man looking for assistance, are the advertising pages in each issue of COTTON. The advertising sections represent an accurate and fresh index of the latest ideas developed by specialized efforts of the several hundred concerns using the pages of COTTON from month to month to tell you of their products. Use the advertising section as a buying guide, for you will find it, and the firms who use it, a clearing house of information and knowledge.

Again---
Merry Christmas!

THIS issue of COTTON will reach its readers shortly before the Yuletide season, and COTTON, and each individual associated with it—extends here to every reader and business associate sincere and cordial greetings, with appreciation of every service, and thoughts of every pleasant contact established or renewed during the year which is closing. We hope that 1930 will bring to you the fullest measure of happiness and abundant prosperity.

Only the very best is acceptable

ASK any well-gowned woman how to select clothes like hers and she'll probably tell you to begin with an ideal. "From the skin out," she'll say, "every garment must be measured by one standard—*only the very best is acceptable.*"

Ask any manufacturer how he builds quality into his garments or fabrics and he'll tell you to begin with an ideal—only the very best is acceptable. "But," he'll probably add, "the best isn't always the most expensive."

Or ask any Industrial Rayon employee why Premier yarn is so good. He'll tell you quickly of an ideal—only the very best is acceptable. For he knows certainly that into every strand of Premier Rayon goes all the skill, all the care, and all the inherent quality that man can apply.

INDUSTRIAL RAYON CORPORATION

General Offices: West 98th Street and Walford Avenue, Cleveland, Ohio
Plants: Cleveland, Ohio and Covington, Virginia

Premier Rayon

PREMIER INDUSTRIAL RAYON

WE'RE STILL "BARN-RAISING"

SEVERAL YEARS AGO there appeared on this page a little story about "barn-raising," based upon an old custom among farmers. The idea was, briefly, that of cooperative assistance. When a farmer in a community was to build a barn, the organized strength of the whole community was combined to help a neighbor, and each neighbor's aid was available to all the others and was cheerfully returned by them whenever need arose.

A parallel was drawn between this plan and the textile manufacturing industry, in which COTTON endeavors to serve as a kind of barn-raising occasion each month. Most of the articles in this magazine either outline a personal experience in some mill or plant, or answer directly the questions submitted by some other mill man—and any of these is just as much a neighborly act as putting a shoulder underneath a giant timber that is to support the roof of a barn.

Arthur Dixon Tells a Story

Arthur M. Dixon, of Gastonia, N. C., president of the American Cotton Manufacturers' Association, recently told us a true story of his first experience in textile manufacturing which serves to point a contrast which exists in the textile industry today as compared with the time of the story—some twenty-five years ago. As best as we can reproduce here the inimitable story-telling faculty of Mr. Dixon, the incident was somewhat as follows:

"In learning the mill business, I started in at the card room, and had finally reached the position of second hand and card grinder, and was receiving the princely sum of $1.25 per day.

"The superintendent of the mill told me that he thought it would be a good idea for me to try to learn something of spinning, so he put me to oiling and tying on bands in the spinning room, at a daily wage of 70 cents. One day I went to the overseer of the spinning room and asked him if there was any comparative table which would tell a person the number of traveler to use when changing from one number of yarn to another.

"He asked me to come down to his office, and then he proceeded to tell me that the superintendent of a certain mill some years before had sent for him and had offered him the position of overseer of the card room. He said that things were in a terrible mess, but that he finally consented to take charge.

"Upon arriving at his new job, he proceeded to make changes all the way through the mill—the weight of the laps at the pickers, the draft and setting of his cards, twist and draft and tension of the slubbers and speeders, etc. He wound up by saying,

" 'And, Arthur, when my roving began to be put in the creels of the spinning frames, following the old roving, the spinners cried for my roving.

" 'Arthur, you have some bands off. You had better go and tie them on. . . .'

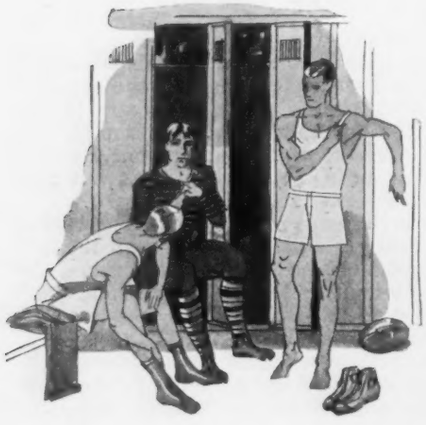
"That was all he ever did tell me about a comparative table for changing travelers on a spinning frame when a change in number was made."

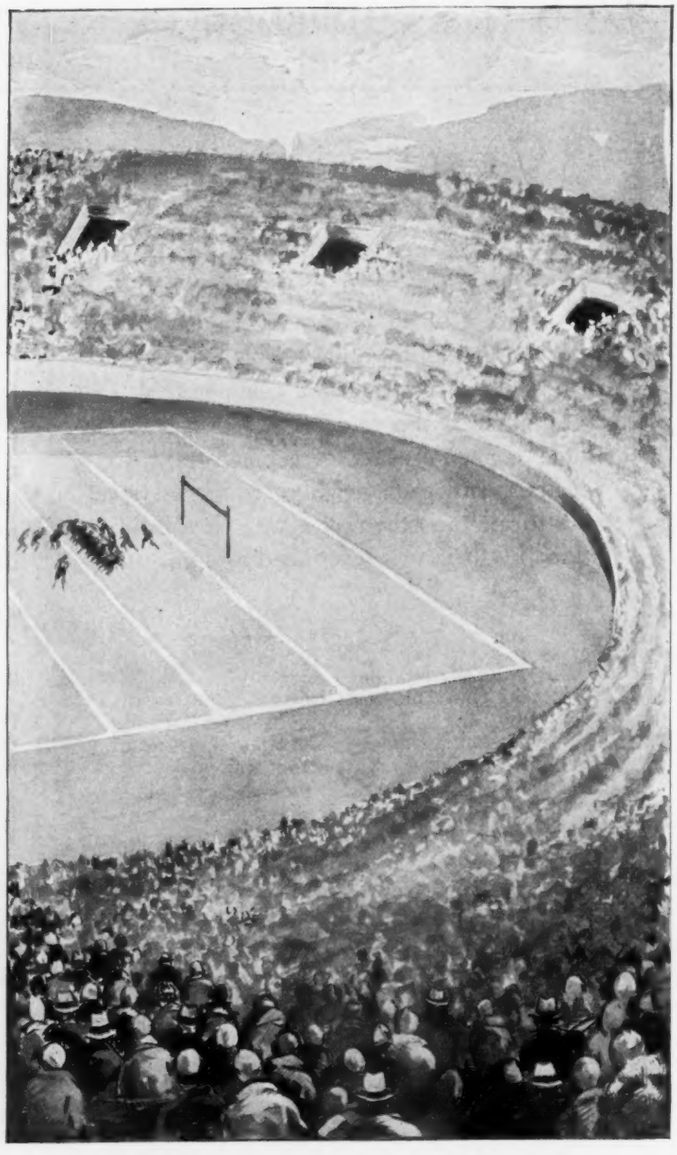
TO EVEN A BEGINNER, this story, reflecting as it does a rather general condition in the "old days," typifies that overseer as being the kind who jealously guarded what information he had about changing travelers, rambling onto some irrelevant subject until he could find a good excuse for sending young Arthur back to his job without divulging what he knew, if anything, on the subject about which he had inquired.

How different today! The various discussion meetings in the South—recently augmented by similar ones Up East—provide an open forum for the "young Arthurs" of today, as well as the older ones. At individual mills, time has gradually broken down barriers formerly existing as to the exchange of information.

COTTON feels, justifiedly we hope, that it occupies a definite place in this new scheme of "barn-raising." Through its editorial pages, daily service is rendered to operating executives and others in the securing of desired information. Much of this is direct, specific service, but the bulk is later disseminated through the magazine. And in the advertisements, makers of machinery and supplies become neighbors in the barn-raising, contributing their part, as they know how to saw and hew the timbers of physical equipment that support the walls of skill and experience erected by the mill men.

Now in every field





BE it football field or locker room .. grandstand seat or bleachers... movie show or opera ... you'll find men and women wearing garments made of rayon.

Every field ... every walk of life has favored rayon with acceptance. But always the demand is for the best.

Manufacturers who have used PREMIER Rayon have long requested Industrial to supply this quality yarn in a wider range of deniers. As a result of this demand, a new plant began in August its ceaseless spinning .. doubling the former output of PREMIER.

PREMIER quality rayon yarn is now available in a wider range of deniers and in finer counts. Today there's a PREMIER yarn for every field ... for almost every use.

INDUSTRIAL RAYON CORPORATION

General Offices: West 98th St. and Walford Ave., Cleveland, Ohio

Plants: Cleveland, Ohio; Covington, Virginia

Premier Rayon

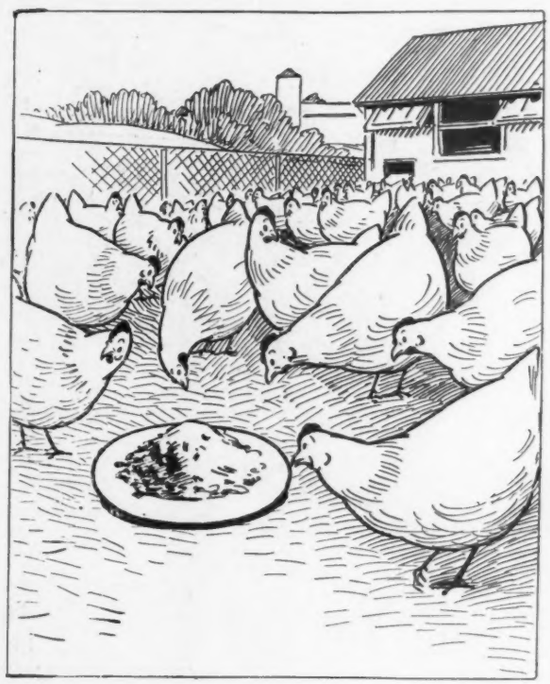
PREMIER INDUSTRIAL RAYON

With the Publishers—

Competition *and* Chickens

Roger Babson Sounds a Warning to the Business Man Who Lets Competition Worry Him

"WHEN THINGS seem to go wrong and I am upset by competition, abuse, and other things which go with business, I get a plate full of meat scraps and take them down to my chickens. Upon entering the hen yard gate, I place the plate on the ground," said Roger Babson recently.



"It will be some time before any chicken has the courage to go up to that plate. Usually their food is thrown to them on the ground, and they are not used to the sight of a plate. The chickens will walk about the plate and look at it for some time before one bird has the courage to dive and seize one piece of meat. Finally, this one daring bird makes the attempt, finds the meat good and runs away with it.

"But even then, do the other chickens go to the plate and likewise secure morsels of meat? No, they all forsake the dish and chase this one chicken who has in its bill one small piece. Until all are exhausted, they will chase this one chicken with one morsel about the yard, while the entire plate full of rich pieces of meat remains deserted!

"This trait serves as an excellent warning to me. It makes me stop chasing the other fellow, and go to the source of supply and get my own food. Some one has said that he cared not how many bricks people threw at him, provided he could pick them up and lay them.

"These chickens not only teach me to quit worrying about the other fellow, how much he has or what he is doing, but also to get busy and create something myself."

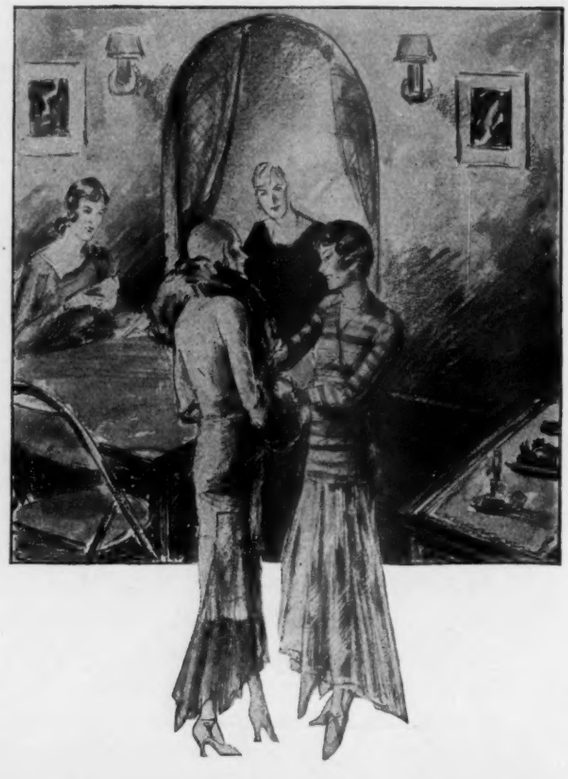
THE LITTLE STORY above is taken bodily from the December issue of "The American Outlook," published regularly by the American Laundry Machinery Company, Cincinnati, Ohio. We feel that it carries a thought well worth the consideration of the textile executive, whose problems, after all, are similar to those of every other business man in that he must secure business and make a legitimate profit out of it in order to continue in a justified existence.

The many ramifications of just how this can be done are beyond the scope of this page; but it is certain that a more determined, energetic activity is one of the essential requirements. And no more appropriate time could be selected for some fundamental thinking and acting along this line than the beginning of the New Year—following, as it does, a period which for many has perhaps been one of following the other chickens.

Get the spirit of the moment

PERSONALITY . . . . loveliness . . . . the embodiment of all that is beautiful . . . milady's wearing apparel must equal her personal charm.

And the makers of rayon lingerie and rayon textiles are equal to the occasion. In Premier Rayon they find a yarn that meets every exigency, that satisfies every requirement . . . a yarn of surpassing excellence.



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Premier Rayon

PREMIER INDUSTRIAL RAYON

With the Publishers—

Mr. Callaway

Mr. Callaway is one of the leading figures in the textile industry, being head of the Callaway group of mills in Georgia, with headquarters at LaGrange and plants there and at Manchester, Milstead, and Hogansville. He is also president of the selling organization, Callaway Mills, Inc., in New York City.

"The Future of the Industry,"

Prepared Exclusively for COTTON

By CASON J. CALLAWAY

THE COTTON TEXTILE INDUSTRY, despite its great age, is just at the beginning of its period of greatest usefulness. The industry will see a new era of prosperity and progress when the manufacturers really co-operate in a nation-wide educational campaign that will demonstrate the beauties and possibilities of cotton products, as well as their economy.

The textile industry has suffered because of its great age, and the resultant idea that all the uses of cotton have been found and exploited. In spite of the fact that more than 10,000 uses for cotton have been discovered, there is still enormous room for development and progress. If cotton, like rayon, were new, the enthusiasm it would arouse would bring to its development the greatest creative brains of the world, and the industry, unhampered by centuries of casual acceptance, would be on a plane of unheard-of prosperity.

Cotton is the greatest and most valuable of all textiles, and we are missing tremendous opportunities to make it more popular and acceptable. Good progress has been made, particularly through the activities of the Cotton Textile Institute and the Manufacturers' Associations during the last year, but with competitive conditions as they are it is up to the manufacturers to be still more alert this year. Cotton products must be designed and styled to satisfy the modern demand. New uses and new treatments must be found and approved. The individual manufacturer must do more basic research, and find a better way of doing his work.

I firmly believe that the future of the industry depends to a great extent on our inducing the people of the United States to accept cotton in its rightful place at the head of the textile list, and the measure of our success will be the measure of the speed with which we realize that it is the manufacturer's job no less than the distributor's to sell the consumer on cotton.

Winning approval

AS surely as a woman covets approving eyes (and what woman doesn't?) she selects her wardrobe with infinite care . . . each item beyond reproach.

The undoubted ability of women buyers to recognize quality in merchandise has led to an increasing use of Premier Rayon in rayon garments and rayon textiles.

For manufacturers know that only from a yarn of the uniform high quality of Premier can they hope to make fabrics which will please the modern woman's discerning eye.

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Premier Rayon

PREMIER INDUSTRIAL RAYON

MEMBER RAYON INSTITUTE OF AMERICA, INC

Why Not the *Whole* Meal?

HERE ARE two stories, introduced here to point a moral and adorn a tale: A man taking his first sea voyage, and forced by necessity to economize, prepared his own meals in his cabin, until, on the last day out, he learned that the meals in the dining salon were included in his transportation. A young lady, taken to dinner by a swain whom she wished to impress favorably as to her economical proclivities, declined the salad and dessert because she did not know they were included with the meal he had ordered.

These commonplace stories are brought to mind by a visit just paid to the editorial department, to which had just come a letter from the superintendent of one of the large and important knitting mills of the South, doing both seamless and full-fashioned manufacturing.

The editor had written to this superintendent, calling to his attention some recently published articles that had appeared in the general section of the magazine; in the thought that the "super" had overlooked them because they were not in the Knitting Section. We take the liberty of quoting from the superintendent's reply, as follows:

> "I read both of these articles in COTTON at the time they came out, and enjoyed them very much. * * * I will say in this connection that not many things in COTTON escape my notice, even to the advertisements. I used to read only the Knitting Section, but found out I was missing a lot of good information by not turning back, or I might say, beginning at the first and going forward.

This splendid voluntary statement might seem to belong more appropriately on the "Among COTTON's Readers" page just preceding, but it has been borrowed for use as the text here this month.

The construction of a magazine reaching a field so varied in its direct interests as textile manufacturing is, has always proven an interesting occupation. We suspect that some readers whose interests are confined to the knitting industry may be concentrating upon the articles in the Knitting Section—likewise that some readers concerned more with spinning and weaving devote their available time to the mass of manufacturing and other information found in the general departments of the magazine.

This man, however, has clarified the perspective, and has caused us to direct the attention of these readers, more definitely to the fact that general articles pertaining to merchandising, general subjects affecting the textile industry, management, general plant operation, etc., etc., located usually in the general section of the magazine, are just as applicable in most instances to one type of textile industry as to another.

We quote this letter, therefore, to illustrate specifically to other knitters the value of partaking of the whole meal, and to acknowledge with appreciation this indication of reader-interest in the entire magazine. Old-Timer, as an illustration, and his inimitable sayings and observations, will in the main have just as much appeal to the knitter as to the weaver—for after all, he deals with the individual and with the problem of human nature, to a very large extent, and thoughts in this direction find fertile ground, regardless of whose field it is into which they may fall.

By the same token, readers other than knitters who may be inclined to regard the material in the Knitting Section as being outside of their field of immediate interest, are overlooking a good bet if they are not absorbing the fine human philosophy and advice found regularly in the "Letters from an Old Knitter to His Son," in that section.

And, as the superintendent quoted indicates, the great bulk of the advertisements, wherever placed in the magazine, usually apply with equal force and value and importance, to textile mills, of whatever character and location.

THE+PLUS+FEATURE+OF+PREMIER+RAYON

No matter whom you deal with at Industrial, you deal with a man who takes a keen, personal interest in your individual needs. This is a fixed principle with us.

For your interests are our interests. Your needs are our needs. Our specialists in the use of rayon are always available to help mills achieve results in the use of Premier which will be outstanding—*sales-building.*

We like to think of our customers as partners in business with us—with interests indentical—a sale some-

thing more than a mere transaction, an opportunity to be of service in helping the buyer build his business profitably. INDUSTRIAL RAYON CORPORATION, General Offices: West 98th Street and Walford Avenue, Cleveland, Ohio. Plants: Cleveland, Ohio; Covington, Virginia. Member Rayon Institute of America, Inc.

The Busy Cranberry Merchant

"JUST BECAUSE a man keeps busy is no sign he's accomplishing anything," said the old fruit man. And some of the things he cited indicate that the man in the textile industry who substitutes feverish activity for well-directed effort is a loser in this day and age.

"As busy as a cranberry merchant," used to be an old saying in New England and the Middle West. But just keeping busy didn't do the cranberry merchants much good when they began to have difficulty in disposing of their product. They hadn't kept up with the trend in selling. They set out to find why their sales weren't larger, and found out that they had competitors—in other lines.

For one thing, they found that fruit and vegetable and grocery stores were being built differently. Those who sold fruit to the public were building display platforms that would hold boxes compactly and neatly. And cranberries were being marketed in barrels which just didn't fit in at all. Barrels are wasteful of space and contents, most retailers will tell you. So they'd stick the cranberry barrel where it wouldn't be in the way, keep the lid on, and, if people **asked** for cranberries, they got them.

Then the American Cranberry Exchange got busy and put up the stuff in boxes, with neat display cards in each box. These boxes went up on the display platform and sales increased many-fold.

Commenting upon this development, an observer has pointed out that, "Right now there are apple-growers who are losing money for the very same reason. Certain states in the Middlewest grow good apples, but they pack them in baskets and the baskets are shoved around on the floor, almost out of sight, while apples not so good sell just because they are in boxes and get up on the display tables.

"Every industry has got to study all the time to hold its own. But often there's opportunity in some change. Take that new dry ice. It's pretty hard to describe it briefly. But it's made from the gas they have at soda fountains, and surely is cold—140 degrees below zero, they tell me. An ice cream man says it keeps ice cream so well and is so light they can haul as much ice-cream, using it, on a new model Ford as they use to haul on a ten-ton truck with ice.

"Well, I see where Chicago and Atlanta capital are going to form a company to use dry ice and Georgia peaches to give soda fountains and housewives a new handy package. The peaches will be peeled and sliced for table use, frozen, and then packed in one- and two-pound containers before shipment. Now that's finding an opening—there's lots of small apartments and plenty of ice boxes in them."

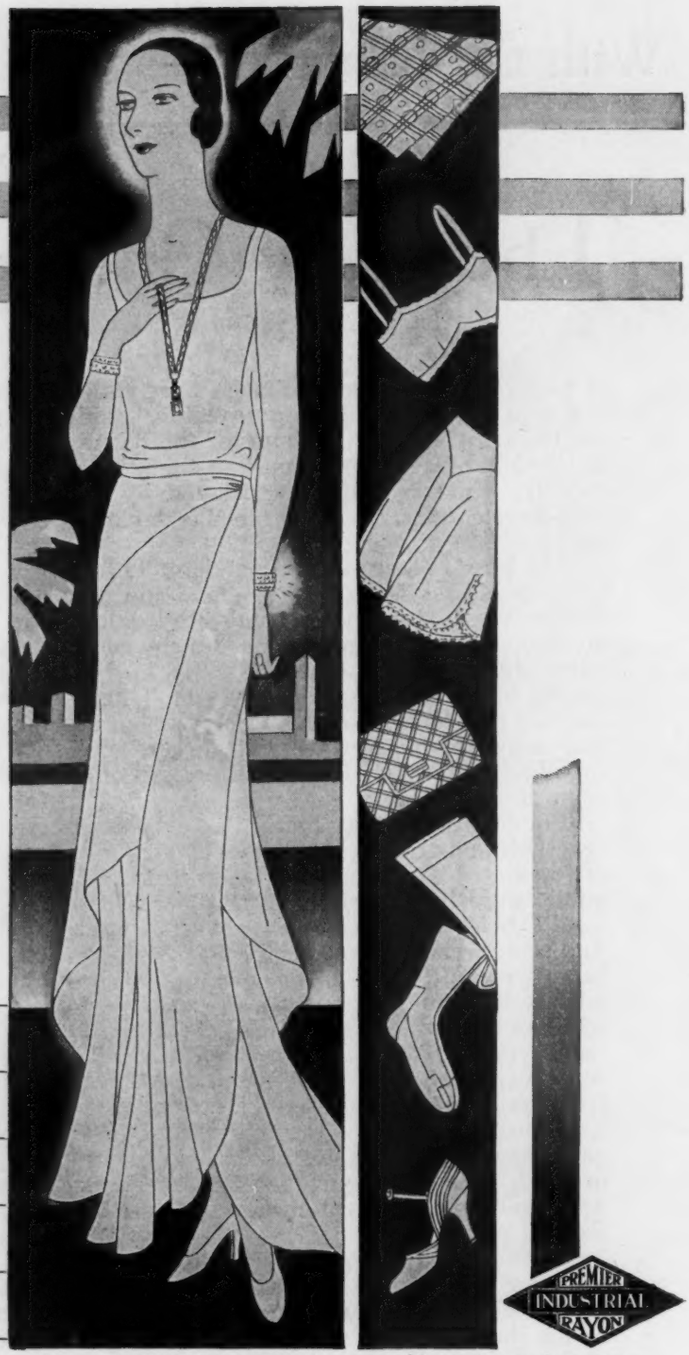
There are several sermons which might be delivered to the textile industry from the foregoing as a text, but chief in mind now is the "busy" cranberry merchant. In textile mills, as in any other business, there are comparable examples. A textile mill executive or superintendent can busy himself without seeming to get anywhere. We all have had that kind of day occasionally, perhaps, but it is comparatively easy for it to become a habit; when well-directed effort would solve most of the problems.

Speaking figuratively, the aggressive and progressive textile man isn't going to be a cranberry merchant; he knows that in the pages of COTTON, both editorial and advertising, he will find accounts and announcements peculiar to the textile industry that have been met and solved. He can learn from it the new methods as well as those that are passing out of the picture.

Specifically, there's the recent case of a knitting mill treasurer who declared that the series of letters published concerning the causes of sleazy knitting, and about the preparation of silk for full-fashioned, constituted the most complete discussion of the subject he had seen. And there's the cotton mill man who recently told us that information published concerning the slashing and weaving of broadcloths had been extremely helpful.

To continue the simile previously used, there's no need in the industry to use barrels, and to do without "dry ice," when a systematic and close study of the articles and advertisements in COTTON is carried out.

PREMIER DELUSTRED RAYON



The rich, dull sheen of *Premier Delustred Rayon* is as lasting as the fabric itself ❖ For this subdued lustre is *inherent in the yarn* and *not* obtained by coating with some substance after manufacture. Garments and fabrics fashioned from this yarn undergo wear and washing without any effect upon their deep, dull beauty ❖ Mills are using Premier Delustred Rayon for those purposes which require a rayon yarn of surpassing excellence combined with a *permanent* rich, subdued lustre.

Lustrous or delustred—skeins, cones, cops, tubes—a complete line of rayon yarns for every purpose

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Premier Rayon

With the Publishers—

Speaking *of* Conventions

AT about this time of the year, the textile industry, as does many another business group, finds itself in attendance upon its various conventions. We add our endorsement, most heartily, to these occasions. Now-a-days it seems that they are becoming more and more important; even essential.

For it is at the convention, or the exposition, that a mill man finds opportunity to improve himself, especially along two certain lines.

There is first the program of the sessions, which, well-arranged and balanced, informs him, through speeches and discussions in which he may participate if he choose, of the advanced and expert thought and experience on subjects of current interest to him.

The other opportunity presented to him is that of meeting the officials and representatives of those concerns whose business it is to supply him with modern machinery, equipment, supplies and other products essential to the successful and economical operation of his plant or department. He has the further opportunity to discuss subjects of mutual interest with those who specialize in matters which directly and indirectly affect his business. At a "show" or exposition, in particular, is it essential that he examine the exhibits of what is new and what is helpful.

To justify their existence, these conventions and expositions must make this expenditure of time and money worthwhile for the textile man—and their continued growth and strength demonstrate that they are filling the job. Long since have progressive textile manufacturers recognized the importance of attending these events in his industry, and all of these occasions attract crowds of serious delegates who come to see and to hear.

Perhaps the parallel between the advantages of these perennial events, and the opportunities afforded by each monthly issue of COTTON, along similar and equally necessary lines, is not so clear to the casual observer as it is to those of us whose work is to publish the magazine each month. We therefore take the opportunity afforded by this "convention season" to point out specifically why we feel sincerely that in every issue we are conducting for the industry a monthly convention, comprehensive in its scope, broad in its application, and specific in that every reader-delegate may be served and receive assistance relating to his particular field of activity.

Without going too much into detail, a few examples will demonstrate the point. A subject of wide and important interest right now to the full-fashioned hosiery manufacturer, to choose one of the many branches of the industry served, is the matter of direct knitting, by means of conditioning, without the use of back-winding. To continue our convention simile, a delegate has submitted this subject to the "meeting," and the opinions of several of the leading manufacturers of the country, upon this point, have been secured and may be read and studied in future issues of the magazine.

Following through an interest among cotton manufacturers in laboratory testing and control, there is as a part of the "program," in the present issue, a discussion of one of the latest developments along this line.

These two illustrations are typical, and could, we feel, be extended into a complete cross-section of the industry. We accept it as our job to follow and present the latest developments in thought and method to the readers.

A further indication is that at a recent discussion meeting in the South, a large majority of the questions submitted came directly from discussion on these subjects which had appeared in one of our discussion departments.

Reverting directly to the "convention" idea once more, we referred to the opportunity afforded the mill man to meet with the representatives of those concerns supplying the industry with machinery, equipment, supplies and products, and service. Here is a clear parallel, for the progressive manufacturer recognizes the opportunity provided by the advertising pages of COTTON, to tell the mill man, attractively and consistently, of his product or service—and the mill man has found that a regular study of these advertisements is an excellent way of keeping informed on what is new and what is helpful.

SMARTNESS and QUALITY with Premier Rayon

PREMIER INDUSTRIAL RAYON

Manufacturers realize that garments and fabrics which will readily lend themselves to profitable merchandising must combine smartness and quality.

Is it any wonder that a constantly increasing number are selecting *Premier Rayon?*

They know that only from a yarn of such uniform excellence can they hope to make merchandise that will win ready customer acceptance.

Lustrous or delustred — skeins, cones, cops, tubes — a complete line of rayon yarns for every purpose.

Premier Rayon

INDUSTRIAL RAYON CORPORATION

General Offices:

West 98th Street and Walford Avenue, Cleveland, Ohio

Plants: Cleveland, Ohio; Covington, Virginia

MEMBER RAYON INSTITUTE OF AMERICA, INC.

An Opera *In* Your Pocket

FOR YEARS, COTTON has been viewing with interest any new development in methods of communicating ideas, regardless of whether some new development may replace the trade paper. Up in Schenectady, N. Y., where the General Electric Company is the main industry, the Union-Star recently printed a story of a pocket film phonograph, perfected by Dr. C. H. Hewlett, engineer of the company. This was described as follows:

"Born of the talkies, a 400-foot reel of motion picture sound film, small enough to fit into a coat pocket, will reproduce a complete play or opera, which otherwise would require from 15 to 20 ordinary 12-inch disc records.

"Talking motion picture technique allowed Doctor Hewlett to achieve his result. A jagged line photographed on the edge of the film is the representation of the sound. Light passes through a narrow slit, through the film onto a photo-electric cell. As the teeth of the jagged line pass by the slit, they vary the amount of light reaching the cell, which in turn varies the intensity of an electric current. When this current is amplified and fed into a loud speaker a reproduction of the original sound emerges."

Ordinarily a film like this carries both the photograph and the sound. But since there are no pictures, Dr. Hewlett had more room for "sound tracks". There are nine of them, and a continuous loop of film is used. It unwinds from the inside as it winds up on the outside, after the fashion of automatic movie machines used for window displays. As it does this, the track shifts automatically and with little interruption. With this system and nine tracks, a program lasting an hour and twenty minutes can be played without attention to the apparatus. When the number of tracks is increased to fifteen, the same length of film will play for over two hours.

Recording is done through the same kind of microphone that is used in radio or ordinary record studios. No plans have been announced for the commercial exploitation of the invention.

New communication methods come and come, but the need for the progressive trade paper never lessens. The alert trade paper keeps abreast of the changes in its industry, and presents to the men in that industry a monthly record and exhibit—in a compact form that will find no superior for some time to come.

The makers of the equipment and supplies advertised in COTTON are none the less alert. Their products, to borrow a term from the "talkies" are synchronized with modern industrial practice, as illustrated by articles telling how successful mills are operated.

As long as the trade paper, in a single issue, can be the meeting place of so many minds all occupied with the thought of being of service to the industry, it will be hard to find a device for replacing it. It gives a comprehensive survey of the field each month.

PREMIER INDUSTRIAL RAYON

PREMIER · RAYON

. . . *a builder of good will*

Weavers, knitters and manufacturers of rayon garments find the dependable uniformity of PREMIER RAYON helpful in maintaining a constant standard of quality. Buyers approve the added sales appeal of fabrics and garments made of this dependable yarn. And consumers find that garments made of PREMIER RAYON have adequate strength to withstand wear and washings.

It is little wonder, then, that manufacturers, buyers, and consumers alike attach such great importance to the short statement "Made of Premier Rayon". For it briefly signifies utmost quality, uniformity, dependability, and lasting good will. INDUSTRIAL RAYON CORPORATION, *General Offices:* West 98th St. and Walford Ave., Cleveland, Ohio. *Plants:* Cleveland, Ohio; Covington, Virginia. *Member Rayon Institute of America, Inc.*

Premier Rayon

The Mystery *of the* Blind Beetle

THEY'RE GOING to teach policemen in Illinois the importance of looking more closely for evidence and not to be satisfied with a casual examination.

The Scientific Crime Detection Laboratory in Affiliation with Northwestern University has been opened in Chicago. This project grew out of the disgust of Burt A. Masee, head of the Palmolive Soap Company, and other business men with the horrible massacre of seven gangsters on Valentine's Day a year ago. They guaranteed $300,000 for the school and sent Col. Calvin Hooker Goddard, firearms expert, to Europe to study crime detection schools there. He returned, according to James O'Donnell Bennett, of the Chicago Tribune, with examples like this:

"In Paris the body of a man who had been stabbed to death was found on a refuse dump. The police put his clothes in a sealed bag and shook and whipped the bag until a considerable quantity of dust was in the bottom of the bag. This dust was examined under a microscope.

'The first discovery in the dust was the larvae of a type of blind beetle that breeds only in cellars. Entomology helped the police to that fact. Deduction: 'This man may have been killed in a cellar.'

"The microscope also revealed in the dust a flake of yeast such as is used in brewing beer. Deduction: 'This man may have been killed in a cellar where beer is being brewed.'

"Cellars in a considerable area were searched. In one where beer was being brewed, the walls and steps were stained with human blood. Result: A confession and conviction. The man had been killed for a sum of money which he was transporting for his employer."

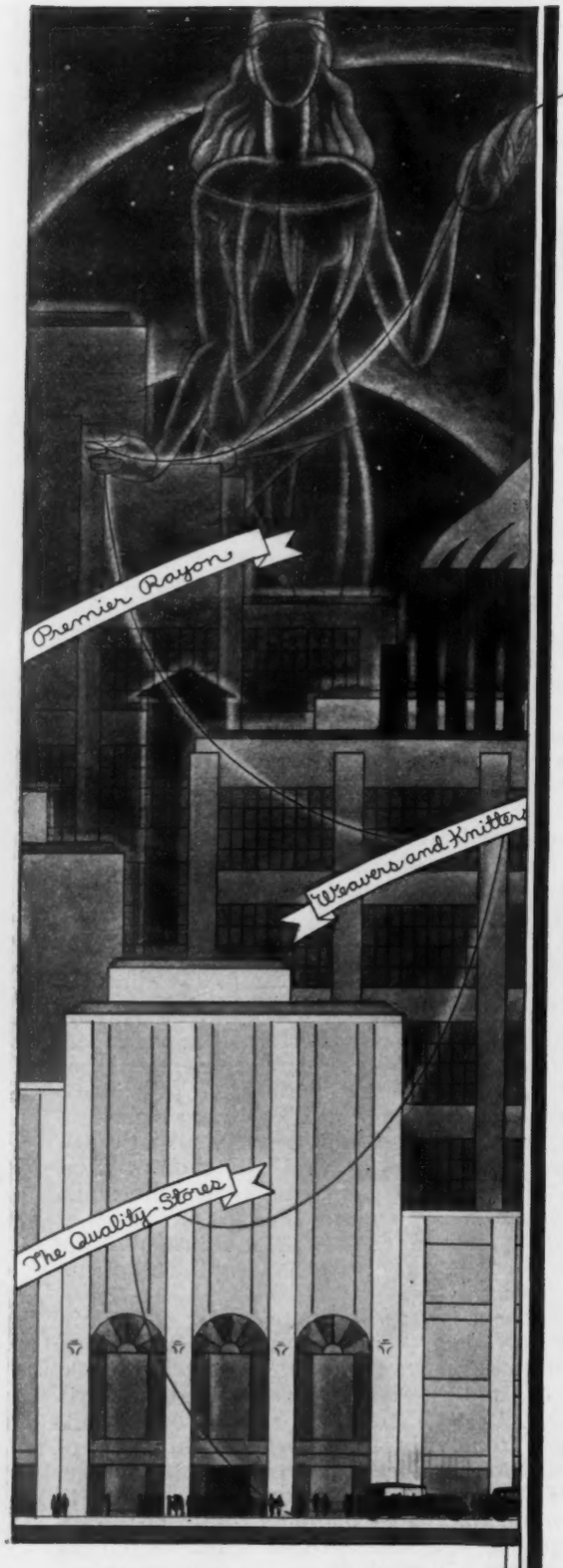
Success in either crime detection or textile mill operation is rarely a spectacular thing. Rather it is a constant and thorough search for evidence. Nothing is too small to be overlooked. Sometimes the ground must be gone over again and again; repeated readings of the articles and advertisements in COTTON will generally bring something new to an executive.

For years we have urged that mill executives form the habit of reading regularly the editorial and advertising sections in every issue. An executive may not at the particular moment be conscious of any pressing problem, but he is developing the faculty of observation and when some problem does arise he will know where to go for the solution.

All crimes are not solved at once and all problems in mill operation are not solved at once. We do not claim that a superintendent can open the magazine and find the answer right away to every difficulty that arises. But we do feel sure that the executive who consistently reads all the articles and advertisements in each issue of COTTON is likely to come across, sooner or later, clues to the solution of the major and minor crimes against successful textile mill operation.

A recent example is the statement made by a well-known western operating executive at the Texas Textile Association convention, reported in this issue. He had experienced difficulty with hot bearings in some of his mill motors. He had some time previously read an article in COTTON by an electrical engineer, pointing out that the usually accepted periodical cleaning of motors does not necessarily clean them, that a thorough overhauling is necessary at least once a year. He dug back for the article, and instituted an annual program of overhauling for all of his motors.

Case after case—some we hear and many we don't hear—could be added. And every mill man knows that, just as the blind beetle larvae and the flake of yeast helped the Paris police to get their man—so it is in the mill that frequently the most insignificant-appearing things can cause the most trouble. COTTON endeavors, among other things, to remind the reader of many things apt to escape his attention, so that when something murders his production, his quality, or organization, he can tell pretty well where the blind beetle is.



The GROWTH of a business that QUALITY BUILT

RAYON today is far more popular than ever before. And its use is steadily gaining momentum. Increased demand, new applications, and continued acceptance have resulted in a growth of the industry which augurs well for its future.

It is a significant fact that the production and sale of Premier Rayon has increased far more rapidly than the growth of the industry as a whole. That, of itself, is an indication of outstanding merit—unfailing evidence of the increasing demand for this quality rayon yarn.

The same quality which has built volume so rapidly for Premier will help to build increased volume and profits for you.

INDUSTRIAL RAYON CORPORATION
General Offices: West 98th St. and Walford Ave., Cleveland, Ohio
Plants: Cleveland, Ohio; Covington, Virginia

MEMBER RAYON INSTITUTE OF AMERICA, INC.

Premier Rayon

PREMIER INDUSTRIAL RAYON

A BUILDER OF GOOD WILL

With the Publishers—

Farewell *to the* Red Caboose

AWAY BACK before children began to absorb the odor of gasoline along with their baby food, and when toy trains were the forerunners of fleets of toy autos, the red caboose at the end of a string of freight cars played an important part in the dreams of American youths. One-half of the youngsters were going to grow up into freight brakemen and conductors, to swing gracefully aboard the red caboose as it rolled past the station—the half that weren't going to be locomotive engineers.

And now the red caboose may become a thing of the past, according to a newspaper story the other day:

"Since freight trains have been drawn across the western prairies, the caboose has been towed at the end of the train. In the olden days it was the headquarters of guards and soldiers who rode with trains to protect them from marauding Indian tribes. It was also the office of the conductor, the rendezvous for train crews while in sidings and the rest room and luncheon quarters for workers."

But, now officials of the Kansas City Southern Railroad have decided, the rear of a train is a poor place from which to handle the train, and they attempted to study the situation. They attempted to modernize the make-up of the train by trying to find a new place for the caboose. But after several experiments they could not find the right place for it. So it went back to its old position at the end of the train.

But, a new post of command was found for the conductor.

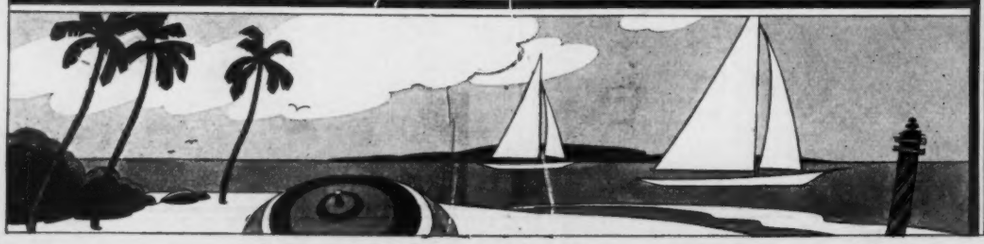
A glass-encased cab was built on the coal-tender. It is big enough for two men, the conductor and the head brakeman. From this unusual point of vantage the train is controlled. The conductor and the engineer can easily communicate with each other. Also, the conductor can easily observe the actions of the train.

Something like this, it is predicted, may sooner or later become standard equipment on all lines. On new engines at least one road will build an elevated cupola on the back end of the tender with seats facing each other for the men. So the report goes.

The commander's post of control at the end of the train because of probable Indian attacks — how customs cling!

A CUSTOM that clung to the textile industry for years was the idea that the only way to learn about the other mills was to visit them personally. That is still an excellent idea, and we give encouragement to it, when possible. But time has become so important a factor that mill executives cannot afford to spend their time traveling. When business is good, they're too busy, and when it's bad they've got to stick around.

We like to consider, as a new and acceptable post of observation and control, a trade paper like COTTON. Here is a vantage point from which the conductor of a textile mill can see in both directions. He can get a glimpse of what's ahead of him, and looking back he can see what some of the other mills have been doing. He is in a place where he can catch the signals of the advertisers of equipment and supplies, when they are trying to inform him that they have cleared the road for safe and swift runs to profitable operation.



PREMIER RAYON *builds* GOOD WILL, PRESTIGE *and* PROFITS

RAYON, through its innumerable applications, has won a prominent place in the intimate wardrobes of nearly everyone. Both the very young and those who are somewhat older find it admirably suited to their personal requirements. And its popularity grows, and grows, and grows.

Manufacturers catering to the enlightened and discriminating tastes of modern men and women have been prompt in their appreciation of this rayon vogue. A combination of elegance and modest price has won universal appeal for rayon-made garments.

PREMIER RAYON invariably imparts that dependability, wearability, and washability which make the manufacturer proud of his choice of PREMIER. Among all quality rayon yarns, PREMIER stands unexcelled—a builder of good will for all who make, sell, or use it.

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MEMBER RAYON INSTITUTE OF AMERICA, INC.

Premier Rayon

PREMIER INDUSTRIAL RAYON

With the Publishers---

THE NINTH SOUTHERN TEXTILE EXPOSITION

DURING THE WEEK beginning Monday, October 20th, the southern textile manufacturing industry—machinery man, supply man, manufacturer and operating executive—will virtually operate with Greenville, S. C., as its base. The Ninth Southern Textile Exposition, to be held in Textile Hall in that city from October 20th to 25th inclusive will without doubt be the most important of the nine exhibitions of this kind, held bi-ennially in this city. In its own building—erected a number of years ago especially to house it—plus several annexes which have been required to take care of the overflow as the number and size of exhibits have increased—the Show will present hundreds of new ideas in the form of equipment, supplies, services, etc., available to the textile mills. It will form the Mecca of all classes interested in textiles.

Already practically two hundred firms have definitely arranged for space, according to advice from headquarters, and it would be wise for the tardy ones who have not done so, to make arrangements immediately.

During the week, the Southern Textile Association, the textile division of the American Society of Mechanical Engineers, and other organizations will conduct conventions, in conjunction with the Exposition. Arrangements have been made, as usual, to provide accommodations in some of Greenville's best homes, for those who do not have hotel reservations. Further plans are to arrange for regular sleeping cars from other southern cities such as Atlanta, to be parked in Greenville.

All in all, every indication is that this year's Show, in the words of the circus barker, will be "bigger and better than ever," and the textile man who is not present at some time during the week will surely be the exception.

and the OCTOBER EXPOSITION NUMBER *of* COTTON

WHILE HERALDING HERE the Ninth Southern Textile Exposition, the opportunity is presented for calling particular attention to the October Southern Textile Exposition Number of COTTON, with which we shall salute the Exposition.

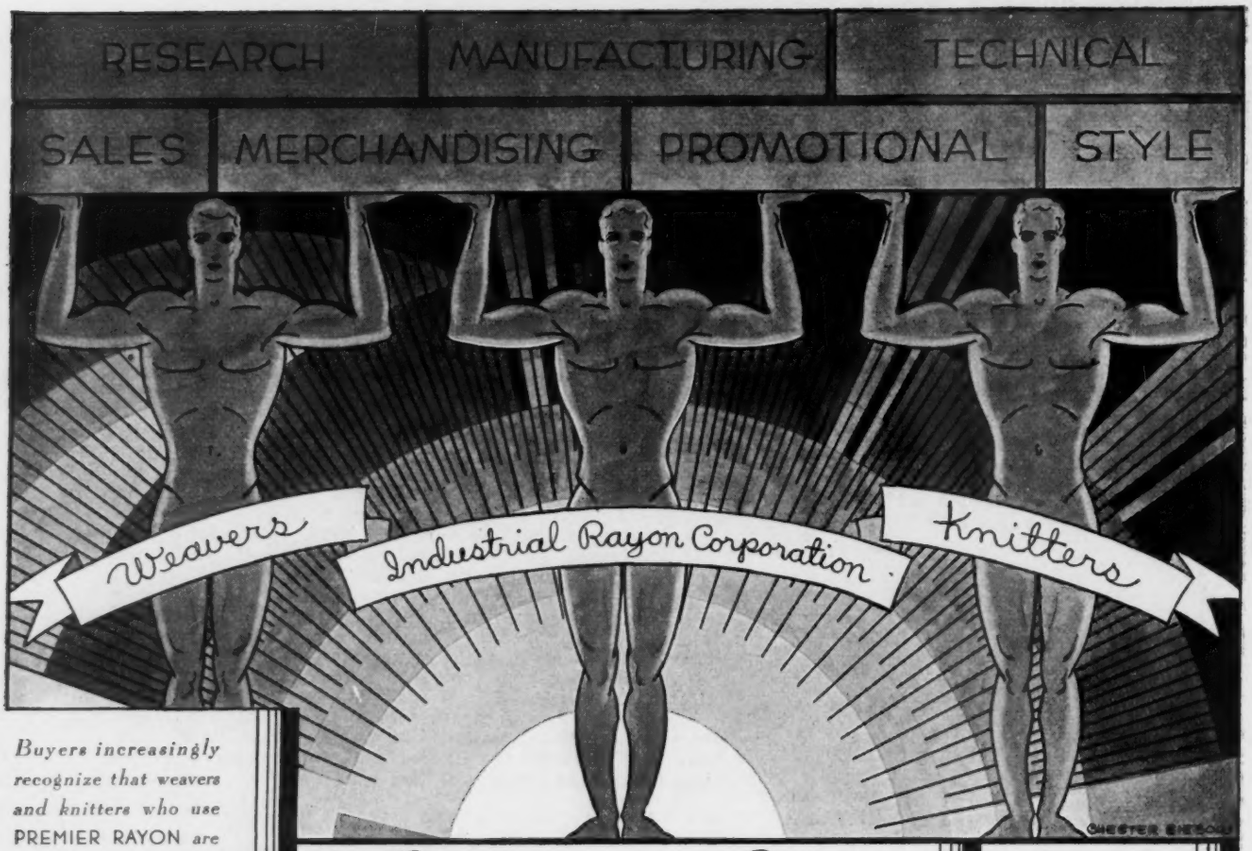
Appearing prior to the Exposition, the October number will carry full information of interest in connection with it. As a special number it will receive, in addition to the regular circulation, distribution among every textile mill of record in the South and at the Exposition. It will be an issue of especial importance in view of its pertinence to the Exposition, an institution long recognized as an integral part in the progress and structure of the southern textile industry.

In addition to the story announcing the Exposition itself, a number of other striking editorial features have been planned, which will contribute to the value of the issue.

One feature is the description of the maintenance and inspection system used by the five mills of The Kendall Company, in North and South Carolina. This article, presenting usable samples of the forms used in this system, was prepared by request by H. K. Hallett, general manager of the company's southern properties. With its subject of machinery maintenance and inspection of so widespread and important application, the article will be one of unusual value and interest.

Another article discussing the spinning ring—a subject little covered in trade literature—will form another feature of the October issue. Written by a man who is qualified by experience and study, this article presents such interesting discussions as ring manufacture and structure, selection of the proper ring, installation and operation, problems and practices—which will appeal to every type of manufacturer of yarns and cloth.

The regular departments and features of the magazine will be planned with a view to conforming to the general plan of the issue and of making it an appropriate salute to the Exposition, where it will receive thorough distribution among the exhibitors and visitors.



Buyers increasingly recognize that weavers and knitters who use PREMIER RAYON *are working cooperatively with the producers of* PREMIER *in a common endeavor to provide rayon fabrics and rayon garments of unsurpassed quality and style.*

Premier Rayon

A BUILDER OF GOOD WILL

a cooperative relationship

WE like to think of the users of PREMIER RAYON as something more than buyers of rayon yarn. We feel there's a stronger relationship between us than usually exists in trade. For their customers and their customers' customers are the final judges of our combined efforts. It's our part of the relationship to supply highest quality rayon yarns. And it is theirs to maintain through the weaving and knitting operations the same high standard of painstaking workmanship, the same striving for highest quality through every stage of manufacture.

INDUSTRIAL RAYON CORPORATION

General Offices: West 98th St. & Walford Ave., Cleveland, Ohio

Plants: Cleveland, Ohio; Covington, Virginia

PREMIER INDUSTRIAL RAYON

MEMBER RAYON INSTITUTE OF AMERICA, INC.

Good News--*and an* Opportunity

"THE ACTIVITY or inactivity of a mill at this time rests chiefly with the management. * * * In those plants where it is the practice of the management to maintain low inventories and a strong cash position, to employ research in the development of new products, new processes, and new markets, also to do the best merchandising job possible, we find a fair volume of business and prospects for ending the year with a profit smaller than in boom years, but a profit, nevertheless. * * *

"There are many firms who are still 'waiting for something to turn up' and it is these firms which are most likely to find themselves out of the running as business once again resumes its normal gait. The mills that have adopted watchful waiting as a policy are the ones that seem to be feeling the depression the most."

The foregoing statement, culled from the recent report of the industrial committee of the New England Council, is reproduced here because of its pertinence, not only to the section in which the committee's investigations were made, but to textile plants generally. It is well worth the reading of any manufacturer; and represents a fair standard by which to measure one's efforts and accomplishments.

Various similes are being employed to illustrate the current return of business generally from the recent depressed condition. That this return has set in is definitely indicated by signs of indisputable authority. One writer recently likened the change for the better to the grass that grows up between the cobble stones of a street that is but little used, attesting, as it struggles up, the energizing power of the sunshine. Readers are familiar with the certainty with which the pendulum, having spent itself in one direction, must return to a corresponding point in the opposite direction; and with the story of the dog which can go only half-way into the woods, for on the latter half of his journey he is on the way out.

Whatever the simile, the fact is recognized that a very definite upturn has been felt in every way, and statistics available show that the textile industry is experiencing a share of this improvement.

Under these circumstances, we especially like the simile used by a prominent southern mill engineer, who, in driving home the thought that improvement is here, becomes nautical, and declares that when the tide has ebbed, and while it is flowing in, is an excellent time to sound productive channels and remove the bars, that there may be no waiting, when demand will again be normal. Get your plant ship-shape with all speed, now, is the advice. Hasten the plans for needed additions, new equipment, machinery reorganizations, so that when the signal comes you will leave a wake of profit.

Sound advice, especially for the textile manufacturer; for, to quote again from the New England Council report, the firms which are waiting for something to turn up will most likely find themselves out of the running as business once again resumes its normal gait.

It is especially appropriate that the Ninth Southern Textile Exposition approaches at this time. Purveyors of equipment and supplies for the industry will offer there the latest developments in their lines, born of a demand for efficiency, economy and progress. It is a refreshing reflection of the industry's current attitude that hundreds of mill financial and operating executives will attend, realizing the turn of the tide, eager for what the show can give to them in modern ideas, methods and equipment.

TO WHAT EXTENT DID YOU SHARE IN THIS 1400% INCREASE?

RAYON—the only fiber ever produced by man—has scored a phenomenal record during the past decade. Just think of it . . . from eight million pounds consumed in 1919 to one hundred and twenty-two million pounds in 1929! That is the amazing American achievement.

Alert weavers, knitters, cutters up, wholesalers and retailers . . . eager to adopt the new in this ever-changing world . . . have capitalized to the fullest extent on the tremendous possibilities of rayon in its manifold applications.

Has your institution shared these benefits? If not, now is the opportune time to begin—for the economy wave now sweeping the country will develop new markets for rayon-content products . . . will create greater volume and more certain profits than ever in the past.

To ensure the maximum benefit from the manufacture or sale of all-rayon or rayon-combination merchandise, insist on a rayon yarn of *highest quality* and *universal dependability*.

This assurance is yours when you buy PREMIER—made by the Industrial Rayon Corporation . . . one of the *oldest*, one of the *largest* and the *fastest growing* rayon company in America.

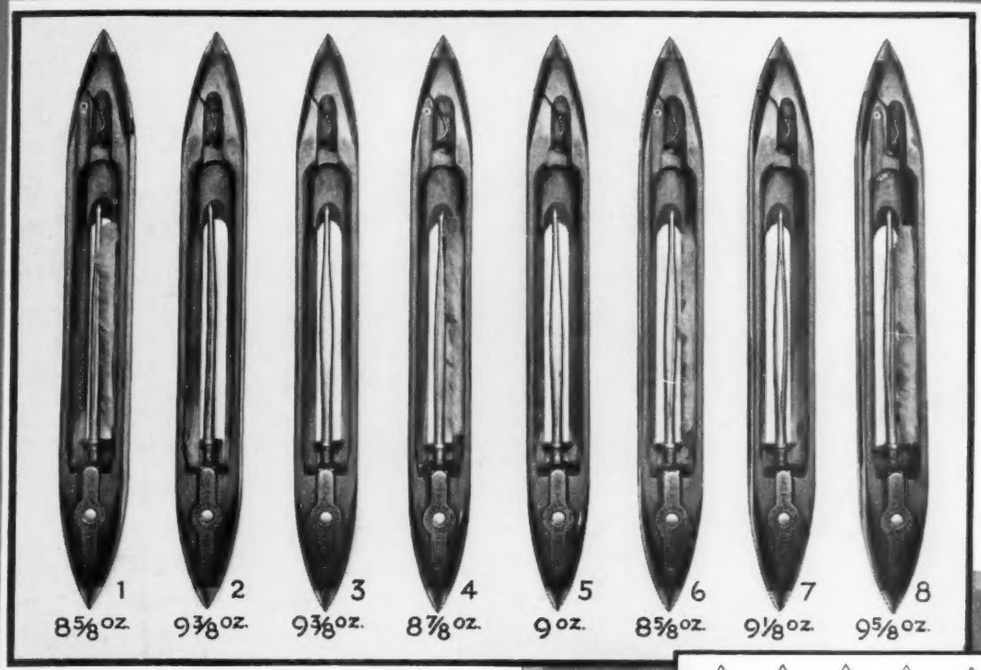
INDUSTRIAL RAYON CORPORATION
General Offices: West 98th Street and Walford Ave., Cleveland, Ohio. Plants: Cleveland, Ohio; Covington, Virginia.
Member Rayon Institute of America, Inc.

Are you receiving a copy of PREMIER RAYON REVIEW *each month? It's an unusually interesting and attractive magazine, containing much helpful information about rayon and how to sell it. A post card puts you on the mailing list.*

Premier Rayon

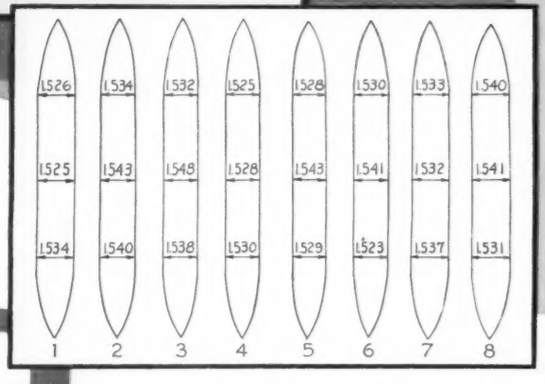
A BUILDER OF GOOD WILL

FOR ALL WHO MAKE OR SELL RAYON-CONTENT PRODUCTS



Here are the eight shuttles described below, with the weight of each shuttle. Micrometer measurements of each shuttle are given on the diagram below.

CAN 8 SHUTTLES RUN IN A LOOM WITHOUT TROUBLE



Micrometer measurements taken between the side bearing surfaces, as indicated above, show a maximum variation of 25 thousandths of an inch.

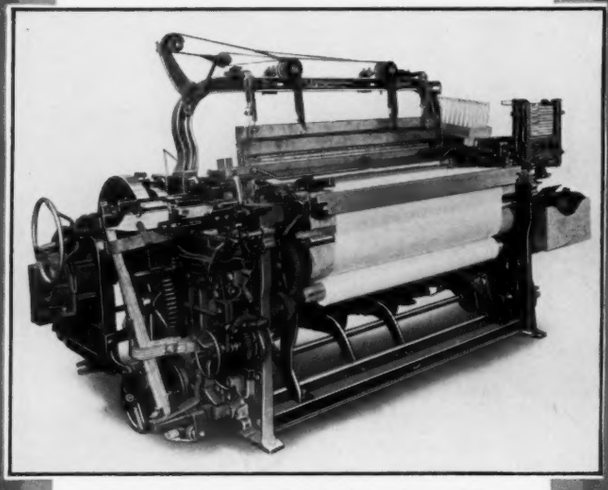
EVER since the introduction of Stafford Shuttle-Changing Looms we have, on occasions, found mill men who refuse to believe that it is possible to run eight different shuttles in a loom without bother and trouble. If there is anyone today of this state of mind, in the face of the universal acceptance of the shuttle-changing principle by the leading fine-goods mills of the world, let him read the following.

Above we picture eight shuttles that have been used for over five years on an experimental Stafford Shuttle-Changing Loom. They have been battered and thrown about by a constant succession of apprentice loom fixers working on the machine. They have had harder usage than any shuttle gets in actual service.

As shown by the figures under each shuttle, these eight shuttles vary in weight by as much as one whole ounce. We also show diagrams of each of the eight shuttles giving micrometer measurements at each end, and one in the middle. A glance will show that these shuttles vary in width by as much as 25 thousandths of an inch. What this variation means in ordinary mill practice is quickly demonstrated by testing them in an ordinary hand gauge. If the gauge is set for the narrowest place on the shuttles

(i. e., the lower end of shuttle number six, measuring 1.523) it is almost impossible to pull shuttle number two through the gauge. (Shuttle number two has an end measurement of 1.540).

These are the facts. You probably admit with us that these eight shuttles are about as poorly matched as any set a weaver would want to work with. You know from your own experience that you wouldn't want to use any two of these shuttles interchangeably in any ordinary loom.



The perfection of shuttle interchangeability proved by these figures is inherent in any of the thousands of Stafford Shuttle-Changing Looms in service, but in Stafford looms only.

Yet, these eight shuttles, in spite of their variation in weight and gauge, will work perfectly in a Stafford Shuttle-Changing Loom without any special loom adjustment. Moreover they will weave as perfect cloth as the most perfectly matched set of shuttles can produce.

Furthermore, *any* set of shuttles, as poorly matched or as worn as these we show, will work perfectly in any Stafford Shuttle-Changing Loom for which the shuttles are designed.

Please note that we do not advocate the use of such poorly matched shuttles. We merely state that Stafford Shuttle-Changing Looms can and do handle shuttles such as these. In other words, the Stafford Company has solved the problem of interchanging shuttles in a loom. It hasn't been merely an accidental discovery. It is the result of years of experiment and development. It is partly made possible by special attachments. Certain matters of design are involved.

All of these factors can be demonstrated on a loom itself. The shuttles described here are kept for that special purpose in the experimental weave shop here at our factory. They are in use every day proving this point. Each shuttle pictured here is numbered. Anyone is welcome to visit our plant to weigh and gauge them for himself, and try them in a loom.

These are the facts. There are thousands of Stafford Shuttle-Changing Looms throughout the world in which the interchangeability of shuttles is never a problem for the weavers or loom fixers. Can there be any greater proof that the Stafford Company has developed a loom superior in this respect to any in the world?

THE STAFFORD COMPANY

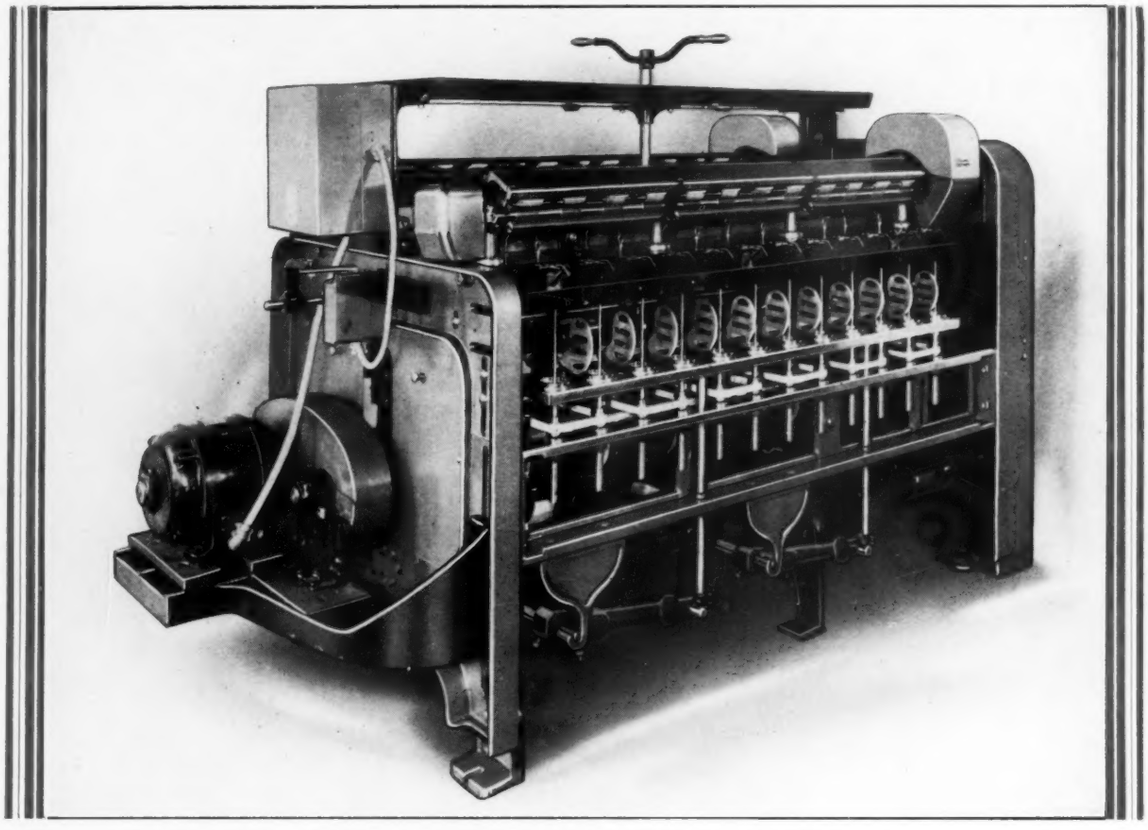
MANUFACTURERS OF

Weaving Machinery

READVILLE, MASSACHUSETTS

Paterson Office: 179 Ellison St., Paterson, N. J.

Southern Agent: Fred H. White, Charlotte, N. C.



WHITIN MODEL "F" COTTON SPINNING FRAME

Even the peas in a pod *are not* EXACTLY *alike!*

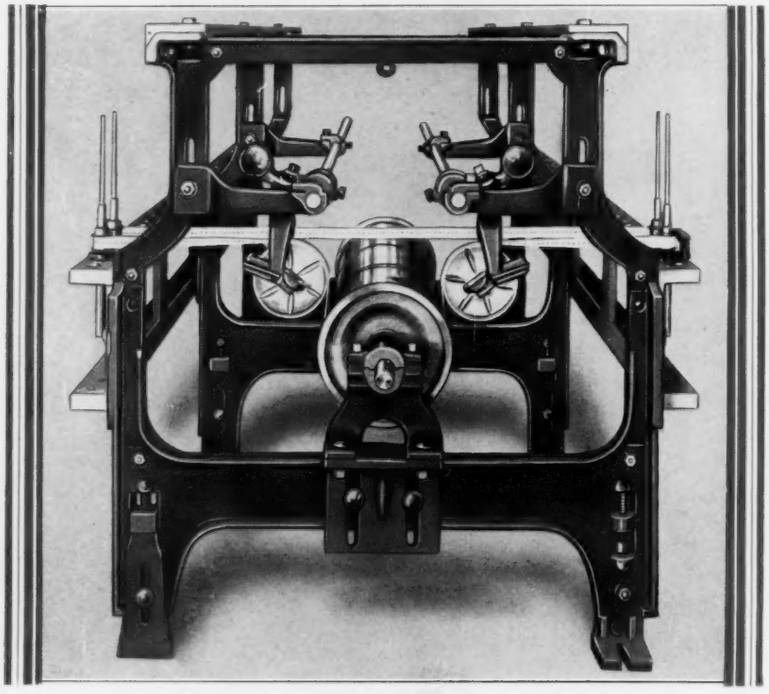
And neither are spinning frames. For example, notice this list of major features on the Model F Whitin Cotton Spinning Frame. Other spinning frames possess some of these features. None—except the Model F—so far as we know, possesses all of them.

Large package spinning, wide gauge frame spinning bobbins with long traverse and large diameter represent the modern trend in cotton spinning. This trend has been sufficiently pronounced so that it is safe to say that any frame spinning 14's or under, and installed 15 years ago, is obsolete today, and deserves instant replacement. Any Whitin sales engineer can give you detailed information.

Major Features of the Model F

COTTON SPINNING FRAME

1. Heavy frame construction, box-head end, heavy cast-iron side rails and roller beams—result in smoother running, less vibration and improved yarn quality.
2. Helical jack and cylinder gears in head end.
3. 10% to 15% more bobbin capacity due to Whitin builder motion and cam, giving tighter and better wind.
4. Hand of yarn twist can be changed by reversing motor switch (see photo of reversing arrangement).
5. Accessible oiling system.
6. Drawing rolls have square joints, positive drive and minimum torque.
7. No drag or fuzzing of roving as it is taken from creel bobbins.



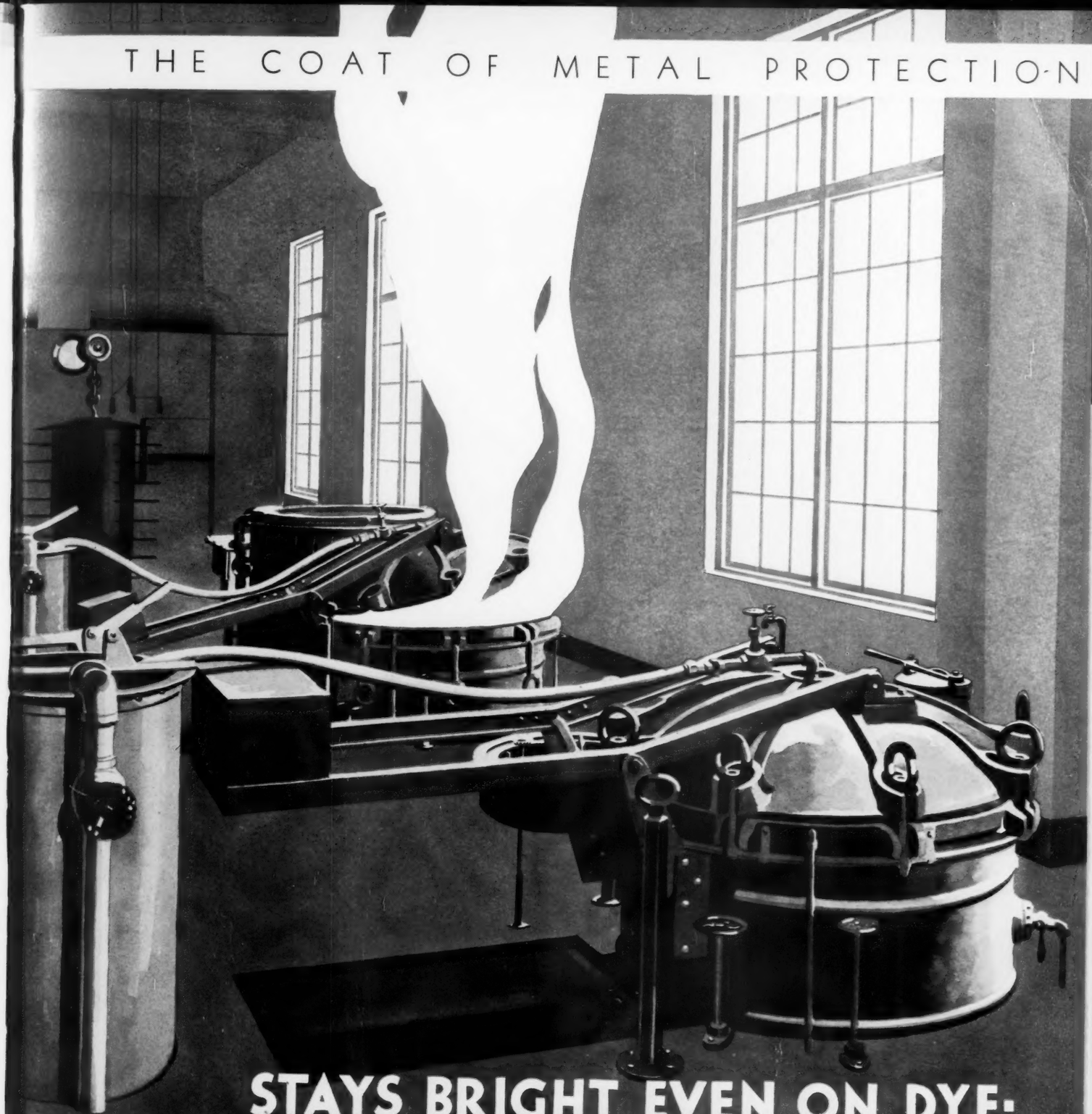
THE REVERSE TWIST TAPPING ARRANGEMENT
ON THE MODEL "F" FRAME

WHITIN MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS, U. S. A.

Charlotte, N. C. Atlanta, Ga.

THE COAT OF METAL PROTECTION



STAYS BRIGHT EVEN ON DYE-ROOM WALLS AND CEILINGS

MOISTURE CAN'T PENETRATE IT.. FUMES WON'T DISCOLOR IT

ALCOA ALBRON
POWDER FOR
ALUMINUM PAINT

THE COAT OF METAL PROTECTION

Catches, Reflects, Diffuses —Uses Light

Good eye sight and plenty of light are essential for the textile worker. A sharp watch must be kept on spinning bobbins and on thin strands of thread. Machines must be threaded and rethreaded without loss of time, and without costly errors.

Alcoa Aluminum Paint on factory walls and ceilings helps both to speed up work, and make work more accurate. Its silvery surface catches light, reflects it, utilizes every ray to the utmost.

As soon as it is applied you will see rooms brighten materially. But that is only the immediate advantage. There are many others. Alcoa Aluminum Paint brings protection that *lasts. It is a coat of metal protection.* Minute flakes of pure Alcoa Aluminum, which form the pigment, overlap and build up, layer over layer, to form this coat which resists moisture and fumes, and does not darken. One coat is usually sufficient for inside painting and will cover any under color.

The best aluminum paint is made with Alcoa Albron Powder. It costs no more than other high grade paints.

Write for a free copy of "Aluminum Paint, the Coat of Metal Protection". It contains much interesting information. ALUMINUM COMPANY *of* AMERICA; 2424 Oliver Building, PITTSBURGH, PENNSYLVANIA. Offices in 19 Principal American Cities.

ALCOA ALBRON
POWDER FOR
ALUMINUM PAINT

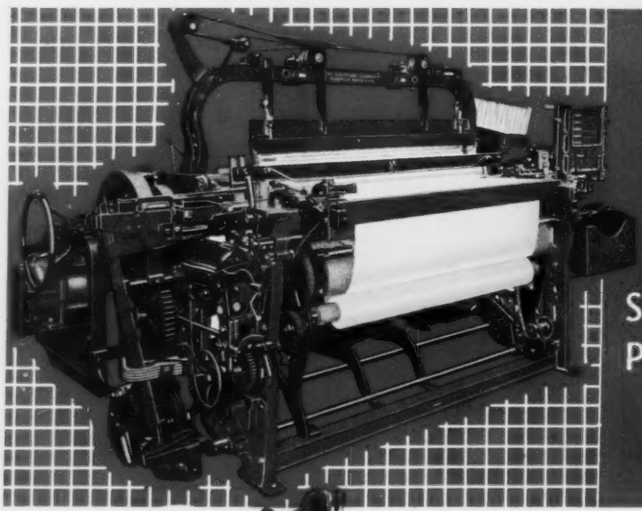
ALCOA

GOING ON TO *Rayon*

STAFFORD

Rayon weaving can be a terrific problem if it's handled incorrectly — it's a source of tremendous profit to those who have found out how to produce first grade work automatically. Correctly speaking, it is not a problem any more, for it's been solved in the Stafford Rayon Loom.

READ "HOW" AND "WHY" ON NEXT PAGE



Rayon

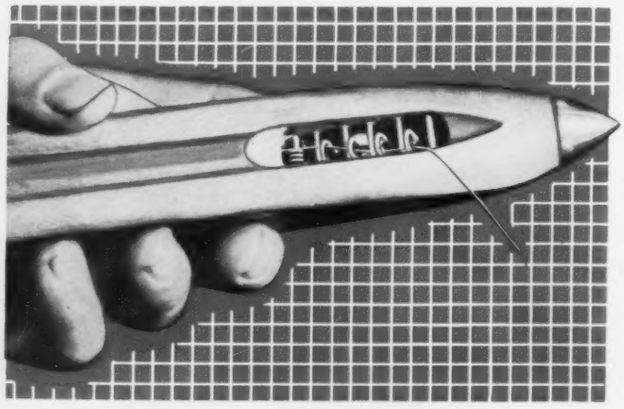
CONFIRMS THE STAFFORD SHUTTLE-CHANGING PRINCIPLE FOR AUTOMATIC PRODUCTION OF QUALITY FABRICS

The STAFFORD
Rayon Loom

Rayon situation proves the Shuttle-Changing principle for all classes of fine weaving.

STAFFORD Shuttle-Changing looms have, over a period of years, won a commanding place in the fine cotton goods field for automatic, low-cost production. *Then came rayon*, which decisively tested all automatic looms for quality of output. With few and minor changes we were enabled to offer the Stafford Rayon Loom for the automatic production of rayons. On this difficult fibre we obtained visual proof to back up the claims we formerly had made for the shuttle-changing principle.

See a demonstration on rayon. Note that it is possible to weave automatically with shuttles equipped with the Paterson tension. Shuttles are filled *and threaded* before they are put in the magazine. This gives control of the filling on every pick,—under tension as in non-automatic looms. The first and last picks, at the time of filling change, are as perfect as any other.



You can use Paterson Eye-Shuttles and weave Rayon under best conditions.

Shuttles with closed bottoms can be used to avoid ballooning caused by air currents.

There are no restrictions as to size, weight, type of shuttle, or filling package consistent with good weaving practice.

Think what this means. It means first grade work. It means automatic production, ranging, as reported in leading mills, from 92% to 97%. It means low cost per yard.

We have the loom. We have the facts. You should know both if you expect to reap the really handsome profits that can be made in rayons. When can we give them to you?

THE STAFFORD COMPANY

MANUFACTURERS OF

Weaving Machinery

READVILLE, MASSACHUSETTS

Paterson Office: 179 Ellison St., Paterson, N. J.

Southern Agent: Fred H. White, Charlotte, N. C.

Printed in U. S. A.

ALUMINUM PAINT—THE COAT OF METAL PROTECTION

Aluminum Paint—

—unharmed by dye fumes

—retards moisture penetration

—reflects light

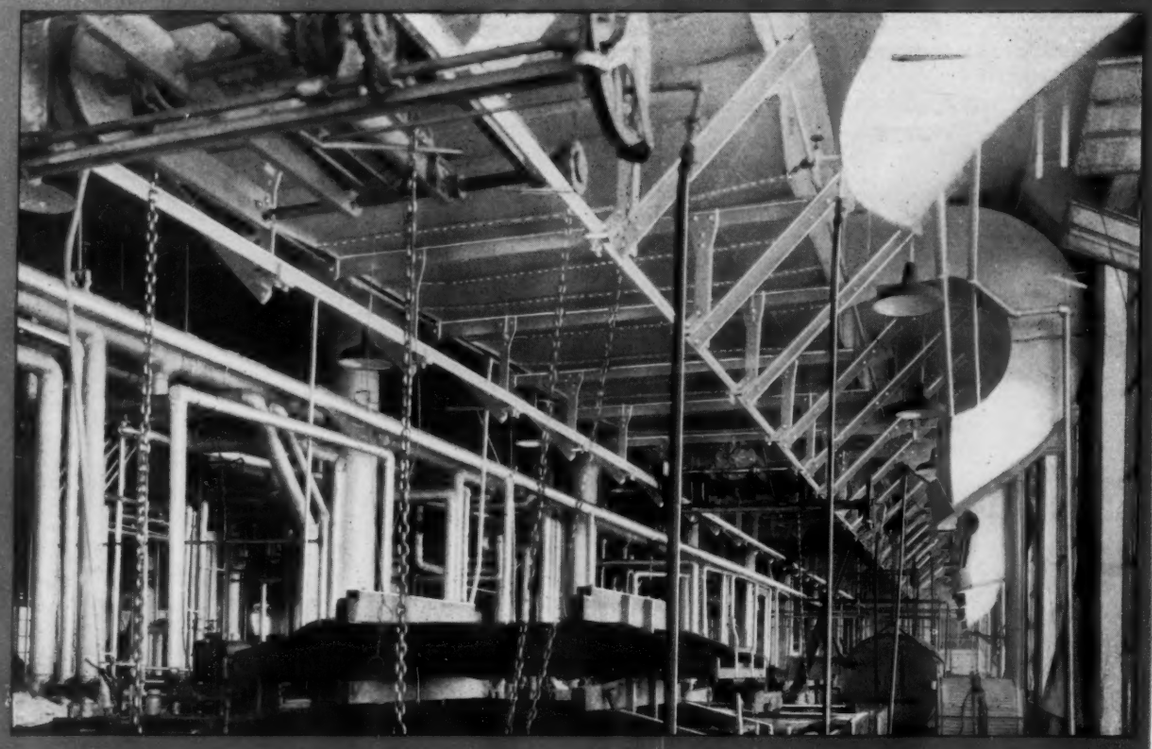
—out-wears ordinary paint

ALCOA
ALUMINUM

ALBRON

ALCOA ALBRON
POWDER FOR
ALUMINUM PAINT

ALUMINUM PAINT—THE COAT OF METAL PROTECTION



Reduces need for artificial light

Mill rooms are noticeably brightened when you put aluminum paint on walls, ceilings and columns. Aluminum paint reflects light readily—less artificial light is needed during daylight hours.

This paint has excellent light-reflecting qualities because its pigment is pure Alcoa Albron. When brushed or sprayed on, the thin, flat flakes of aluminum "leaf" to form a bright, silvery *coat of metal protection* which also resists the penetration of moisture.

For inside use, one coat of aluminum paint will hide stains, streaks, under colors—even black paint. Aluminum Company of America does not sell paint. But aluminum paint made with satisfactory vehicles and Alcoa Albron Powder may be purchased from most manufacturers, jobbers and dealers. Be sure the pigment portion is Alcoa Albron and is so designated.

ALBRON

Let us send you the booklet, "Aluminum Paint, the Coat of Metal Protection". Address ALUMINUM COMPANY *of* AMERICA; 2424 Oliver Building, PITTSBURGH, PENNSYLVANIA.

ALCOA ALBRON
POWDER FOR
ALUMINUM PAINT

DYEHOUSE of CROSS COTTON MILLS

Gaston County Dyeing Equipment has been installed at the Cross Cotton Mills, Marion, North Carolina. This mill's equipment for the spinning of double carded yarns, 18s to 40s consists of 14,000 spindles. The results accomplished by Gaston County Equipment are attested to in their letter.

CROSS COTTON MILLS COMPANY

Double Carded Knitting Yarns

MARION, N. C.

Aug. 6, 1930

Eugene Cross
President

Mr. W. A. McGee, Carolina Manager,
Cotton
Box 1160
Charlotte, N. C.

Dear Sir:

In accordance with your request, we are pleased to send you under separate cover today, photographs of our plant.

Our product is the very highest grade of double carded knitting yarns which we can furnish in Nos. 18's to 40's in both natural and dyed colors and on any package desired.

Our plant is equipped with the latest type Gaston County Package Dyeing Machines and also Gaston County Bleaching Machines, which equipment we purchased after investigating all other makes on the market.

This equipment has not only lowered our production costs, but has also improved the quality of our product, as attested to by the increasingly large numbers of knitters who tell us they prefer to use our yarns.

We will be glad to have you visit us any time you are up this way.

Very truly yours,
Cross Cotton Mills Company
Eugene Cross
President

Mills in every section of the country have had their problems solved by Gaston County Equipment. The range, the accuracy, flexibility and the cost of operation of Gaston Equipment guarantees you greater efficiency, and an improved product.

Gaston Equipment consists of combination Beam and Package Dyeing Machines, Beam Dryers, Beam Winders, Beam Dyers, Package Dyers and Package Dryers.

The interior view at the left shows a typical installation of Gaston County Equipment.

Write for catalogue or consultation on your proposition.

GASTON COUNTY DYEING MACHINE CO.

306 Independence Bldg., Charlotte, N. C. **Plant: Stanley, N. C.**

With Open Arms

Textile Men Welcome This Repair Service

This company is prepared to take care of the many orders that are coming in from all over the South. It appreciates the way in which textile men have so readily accepted this repair service on Steel Rolls, Spindles, Flyers.

It feels sure that those men will profit by this expert service, and save much time and worry by patronizing a close-to-home, personalized service.

Write for quotations.

GASTONIA
ROLLER, FLYER & SPINDLE CO.
GASTONIA, N. C.

Repair Service On

STEEL ROLLS · SPINDLES FLYERS

REMOVING and ERECTING

all kinds of Textile Machinery—regardless of size or location—is easy and safe with our Modern Equipment and Expert Mechanics.

During the past year we have Serviced Textile Mills from Massachusetts to Mississippi, assisting them in Dismantling, Transferring and Erecting their machinery.

If We Can Serve You Write, Wire or Telephone for Detailed Information.

Southern Spindle & Flyer Co., Inc.

Manufacturers,
Overhaulers and Repairers of Cotton Mill Machinery

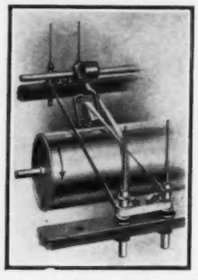
Charlotte, N. C.

W. H. MONTY, Pres. and Treas.
P. S. MONTY, Vice-Pres. & Sec.

The Complete Service You've Been Looking For

At last you can get complete service on the rebuilding of Card Screens, Picker Screens and Spinning Frame Cylinders from a company fully equipped to do the work. As the only company fully equipped to do this type of work in the South, it is considered the fulfillment of a long-felt need by leaders in the textile industry. Write for information.

GASTONIA TEXTILE SHEET METAL WORKS
222 E. Long St. Gastonia, N. C.



Rebuilding Service

PICKER SCREENS
CARD SCREENS and
SPINNING FRAME CYLINDERS

MICHAEL & BIVENS INC.,

Electrical Engineers and Contractors

Textile and Municipal Plants

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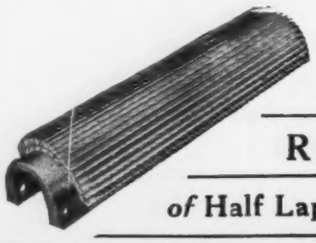
FERGUSON GEAR CO.

CUT GEARS CHAIN DRIVES
BEVEL SPUR SPIRAL WORM SPROCKETS
RAWHIDE BAKELITE AND HARDENED STEEL PINIONS
Member American Gear Manufacturers Association
GASTONIA, NORTH CAROLINA

An ACCURATE Reneedling Service

Combed yarn manufacturers are voicing their endorsement of the Gastonia and Charlotte Reneedling of Half Laps and Top Combs. This service is based on accuracy of workmanship that means settings of correct space and depth. They reduce specks and seed particles to a minimum without loss of noil. Write for detailed information.



GASTONIA
COMBER NEEDLING CO.
GASTONIA, N. C.

RENEEDLING

of Half Laps and Top Combs

BARKLEY MACHINE WORKS

MANUFACTURERS OF TEXTILE MACHINERY PARTS.
Cut Gears—Cast Tooth Gears
Parts for Kitson Pickers, Nasmith Combers, Whitin Combers. General Textile Repairs.
GASTONIA, NORTH CAROLINA

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Successors to the Repair Department of Michael and Bivens, Inc.
GENERATORS, MOTORS AND TRANSFORMERS
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Oil Switches, Auto Starters and Compensators Repaired
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Obermaier

DYEING MACHINE MODEL KRAG

FOR DYEING COTTON YARN ON TUBES

(CAPACITY: UP TO 2400 POUNDS TO A BATCH)

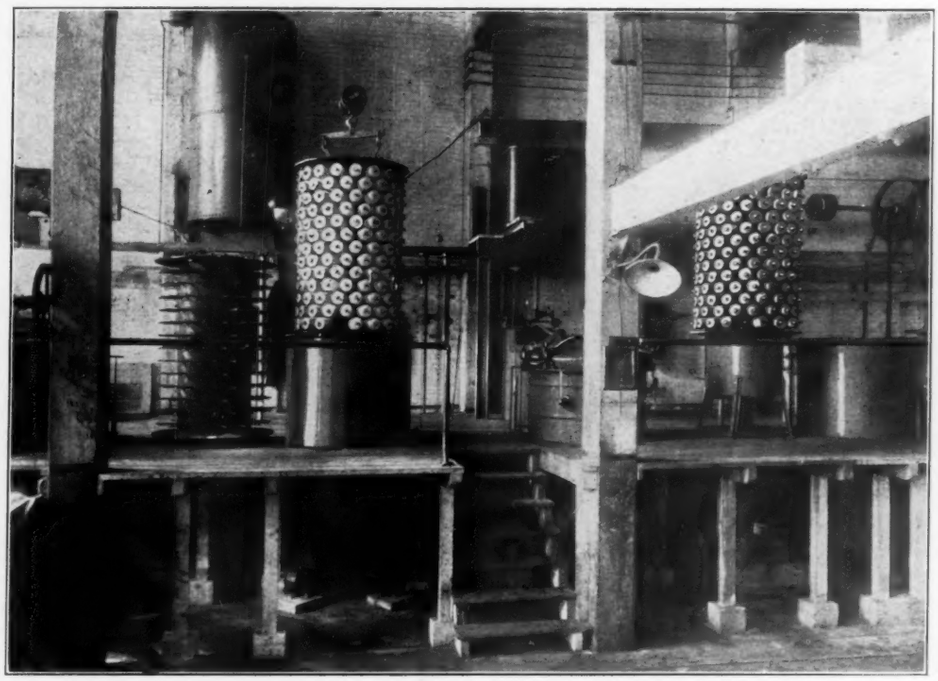

Illustration shows Obermaier installation in Dominion Textile Company Ltd., Montmorency Falls, Quebec, Canada.

The advantages of SYSTEM OBERMAIER are of such importance that no cotton dyehouse can afford to be without this equipment

NO REWINDING necessary as standard mill wound Foster or Universal tubes or cones are being used.

CONTINUOUS DYEING as yarns are loaded and unloaded on material carriers outside the dyeing machine.

SMALLEST VOLUME OF DYE LIQUOR (1:7) with adjustment to increase, creating the greatest saving of dyestuffs, chemicals, and steam.

STEADY CONTROL of dyeing process. Sampling done without opening machine.

CONSTRUCTION of special cast iron eliminating all corrosion. Very small depreciation.

Please Investigate

SYSTEM OBERMAIER applies to Raw Stock, Beams, Skeins, Wool and Worsted Tops

AMERICAN OBERMAIER CORPORATION

Skillman Avenue at 34th Street **Long Island City, N. Y.**

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A Record of Continuous Leadership in the Field of Fine Synthetic Yarns

Through constant laboratory research and plant development work, Celanese Corporation of America has brought Celanese yarn to its present position as the recognized leader in the field of fine synthetic yarns. The history of Celanese is a record of outstanding achievements, some of which may be briefly described as follows:

1. The first voile of synthetic yarn in this country was originated and developed by Celanese Corporation of Celanese yarn.
2. The first and only permanent moire was developed by Celanese Corporation exclusively from Celanese yarn.
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6. Methods of printing and discharge printing on fabrics of Celanese yarns were developed by Celanese Corporation and introduced by the technical staffs of leading finishing companies.
7. The first successful methods of sizing Celanese yarns were originated by Celanese Corporation.

Celanese---

Does not shrink or stretch.
Washes easily and perfectly, drying with amazing rapidity.
Is not injured by perspiration or body acids, does not retain odors and will not rot or mildew.
Retains only a minimum amount of moisture, making it comfortable to wear under all conditions.
Has unique hygienic and insulating qualities, making it cool in summer and warm in winter.
Is not rotted by sea water.

CELANESE YARNS

Trade Mark Reg. U. S. Pat. Off.

CELANESE CORPORATION OF AMERICA

180 Madison Ave. New York City

PLANT AT AMCELLE, NEAR CUMBERLAND, MD.

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Pacific Mills,
Hampton Division,
Columbia, S. C.
Vice-President Southern Textile Association

"NEVER BEFORE, as now, is practical information being sought for by both operating executives and management. In COTTON is found much helpful information for the conservative reader."

J. O. Corn

To the

Cotton Bleacher!

"I want to compare methods of bleaching Cotton. What should I do?"

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See what they guarantee as to: A permanent White, loss of tensile Strength, Cost, daily Output.

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We can install the process for you. Results will please you.

The
ROESSLER & HASSLACHER CHEMICAL CO.
10 East 40th Street New York, N. Y.

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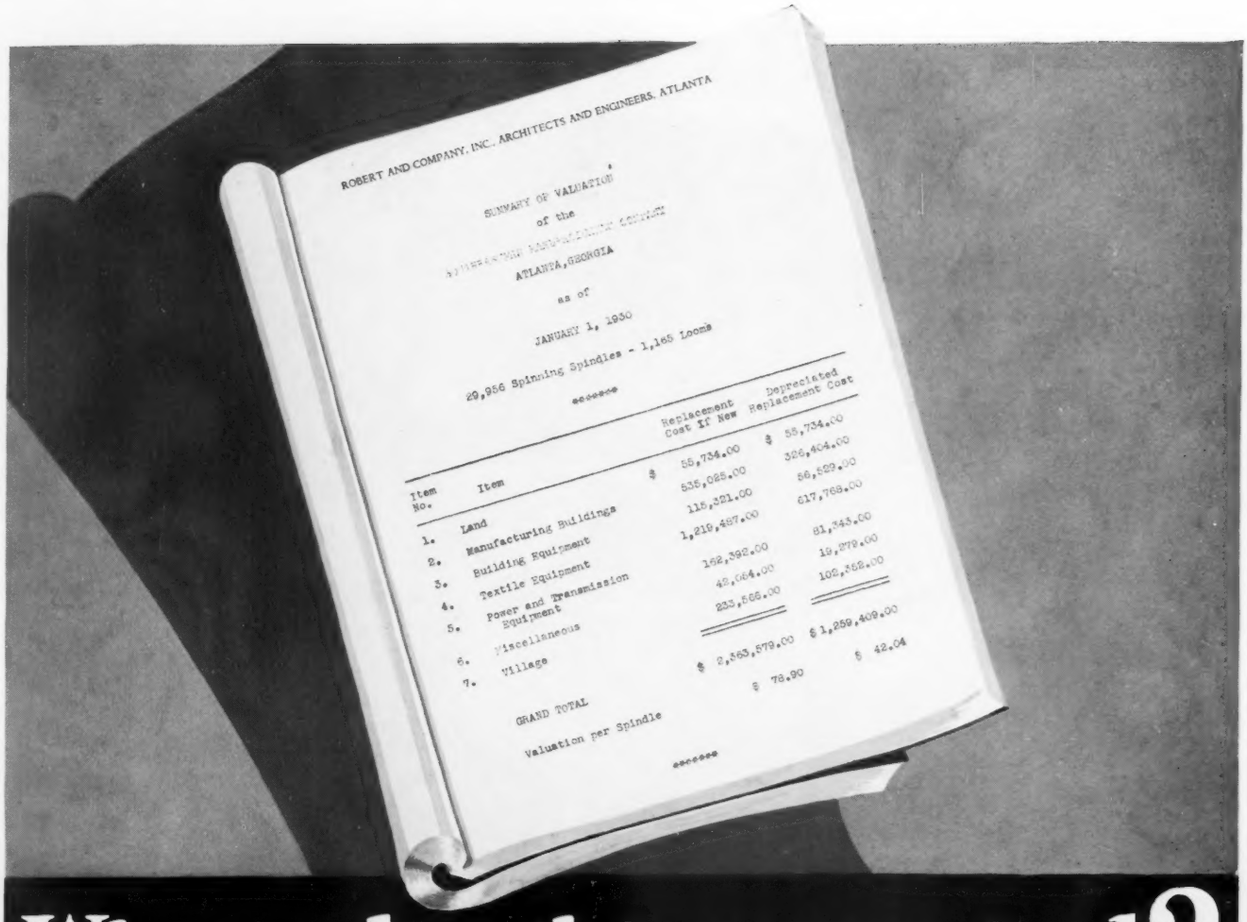
(25 Vol.)
ALBONE "C"
(100 Vol. Electrolytic)
PEROXIDES
PERBORATES
SOLOZONE
(130 Vol.)


ROBERT AND COMPANY, INC., ARCHITECTS AND ENGINEERS, ATLANTA
SUMMARY OF VALUATION
of the
ATLANTA, GEORGIA
as of
JANUARY 1, 1930
29,956 Spinning Spindles - 1,165 Looms
Item No.
Item
Replacement Cost If New
Depreciated Replacement Cost
1. Land $ 55,734.00 $ 55,734.00
2. Manufacturing Buildings 535,025.00 326,404.00
3. Building Equipment 115,321.00 86,529.00
4. Textile Equipment 1,219,487.00 617,768.00
5. Power and Transmission Equipment 162,392.00 81,343.00
6. Miscellaneous 48,064.00 19,279.00
7. Village 233,566.00 102,552.00
GRAND TOTAL $ 2,369,579.00 $ 1,289,409.00
Valuation per Spindle $ 78.90 $ 42.04

What value this appraisal?

The regular yearly appraisals held by the modern manufacturing plant are a vital money-making necessity.

Improvements in machinery processes, new property values, building material cost fluctuations, obsolescence and numerous other items enter into a shift in values that must be known if manufacturing costs, taxes and insurance are to be figured upon the correct basis.

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A plant cannot know whether they are arriving at manufacturing costs correctly, carrying insurance that would more than cover, or only half cover, are paying taxes on fictitious profits or values, unless their figures on physical assets are up-to-date and accurate.

Recent clients who have used our appraisal services are some of the largest mills and financial interests in the country. Write us without obligation.

ROBERT AND COMPANY

ATLANTA INCORPORATED GEORGIA

Architects and Engineers

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CELANESE YARNS

Trade Mark Reg. U. S. Pat. Off.

CELANESE CORPORATION OF AMERICA

180 Madison Ave. New York City

PLANT AT AMCELLE, NEAR CUMBERLAND, MD.

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Clifton Manufacturing Company,
Clifton, S. C.

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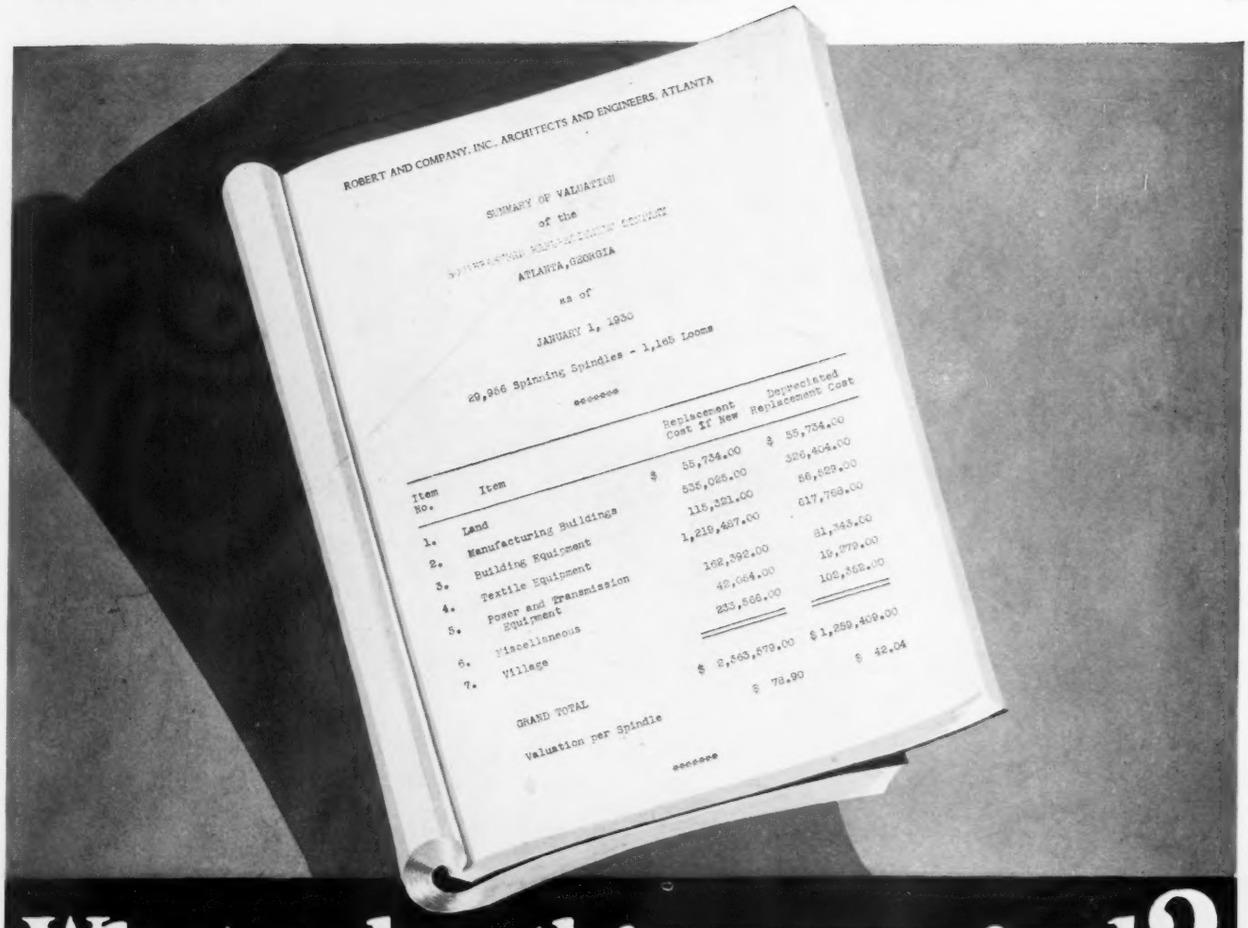
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H. A. BUROW, Supt.
Consolidated Textile Corporation,
Bonham, Texas.
President, Texas Textile Association.

"COTTON has a character of general reading information that is of definite and specific application in mill operation."

H A Burow

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(25 Vol.)
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PEROXIDES
PERBORATES
SOLOZONE
(130 Vol.)

Oil Spraying for Cotton

Who Uses This Stuff, Anyhow?

. . . here is fac-simile evidence of current orders from representative mills.

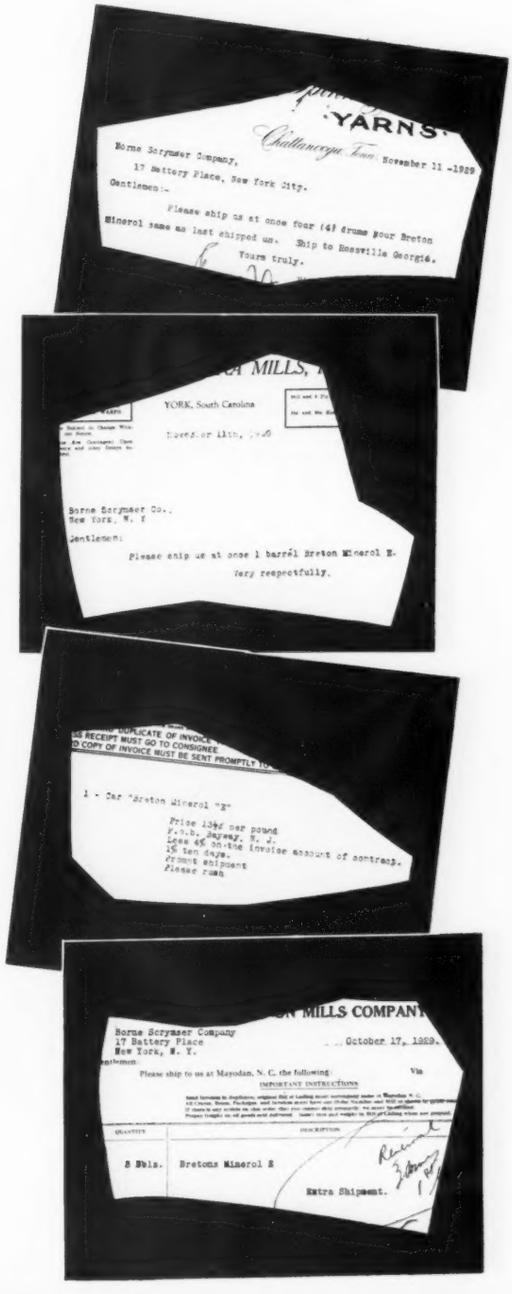
Why Do They Use It?

. . . Because they find

1. The cotton cleans better.
2. The cotton cards better with a better web.
3. The cotton draws and twists to make a uniform yarn.
4. Less dust and fly.
5. The fire hazard is materially reduced.
6. The actual production of yarn is increased.
7. The invisible losses are materially smaller.

These four orders were selected from the files of several hundred customers who are spraying their cotton with "Breton Minerol E".

Perhaps you can guess the identity of these mills . . . if not, we will tell you . . . willingly.



BORNE SCRYMSER COMPANY

17 BATTERY PLACE, NEW YORK

In Every Store Department Today...

Smart Merchandise of

CELANESE *Yarn*

Trade Mark Reg. U. S. Pat. Off.

In Smart Apparel

In every department of the store you'll find smart merchandise of Celanese. For Celanese is adaptable to a thousand modern uses, from apparel to home decoration.

In daytime apparel Celanese appears in sports dresses, afternoon frocks, and beach and bathing costumes. Coats—for afternoon, for sports, for rain—take their smart fashion cue from Celanese Fabrics. And for formal wear, evening gowns and wraps acquire added dignity from the rich textures of Celanese.

For Intimate Things

In intimate apparel—Celanese is found in tricot and lockstitch for underwear, and in woven fabrics for gowns, slips and negligees. Hosiery of Celanese yarn comes in full-fashioned and circular knit styles, in the smart ensemble shades.

In the piece goods and drapery departments Celanese Fabrics of every weave are important fashion factors—sheer Voiles and Ninons, Permanent Moires, weaves of Satin and Taffeta, Mirrocel and Crepes.

In the men's departments there's on display neckwear of Celanese Fabrics, lounging robes, colorful hosiery, the newer shirts and shorts, and coats and suits with sturdy Celanese linings.

Celanese yarn has made possible many of the recent merchandise developments. Because Celanese yarn is unique and possesses characteristics all its own:

It does not shrink or stretch.

It washes easily, dries quickly.

It retains only a minimum of moisture and does not absorb dirt and stains.

It is not rotted by perspiration, sea water or body acids. It will not mildew or mold.

Celanese yarns, fabrics and articles are made of synthetic products manufactured exclusively by the Celanese Corporation of America, 180 Madison Avenue, New York City.

For Hosiery

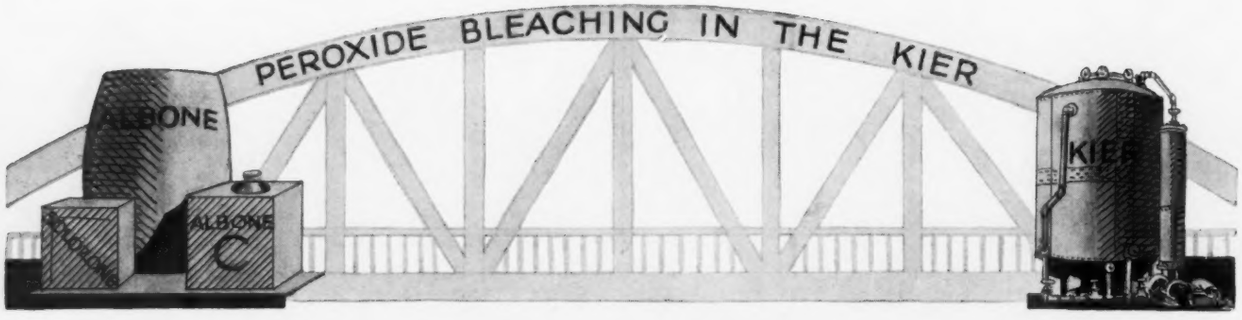
Fabrics by the Yard

Among Cotton's Readers

THOS. J. WALLNER,
Pres. & Treas.,
Virginia Maid Hosiery Mills, Inc.,
Pulaski, Va.
Pres., Cavalier Hosiery Mills,
Narrows, Va.

"COTTON is a great help to the man in the mill, a wonderful reference book, up to the minute, dealing with matters that come up every day. We would not be without it."

Thos J. Wallner.



R&H built the BRIDGE

that took Peroxide Bleaching to the KIER

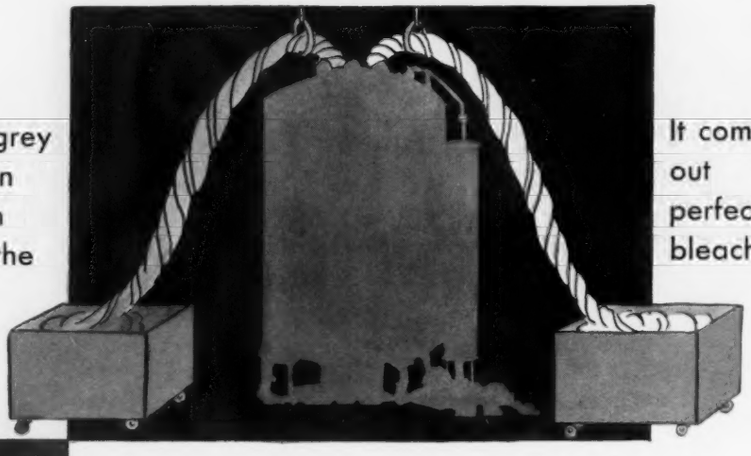
BEFORE:

13 operations;
24 hours;
Damage, Seconds;
Unevenness.

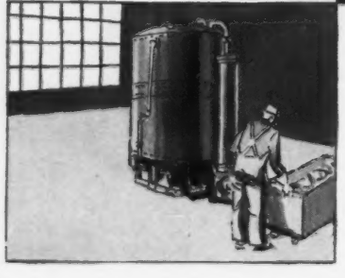
NOW:

3 operations;
8 hours;
Perfect results.

The grey cotton is run into the



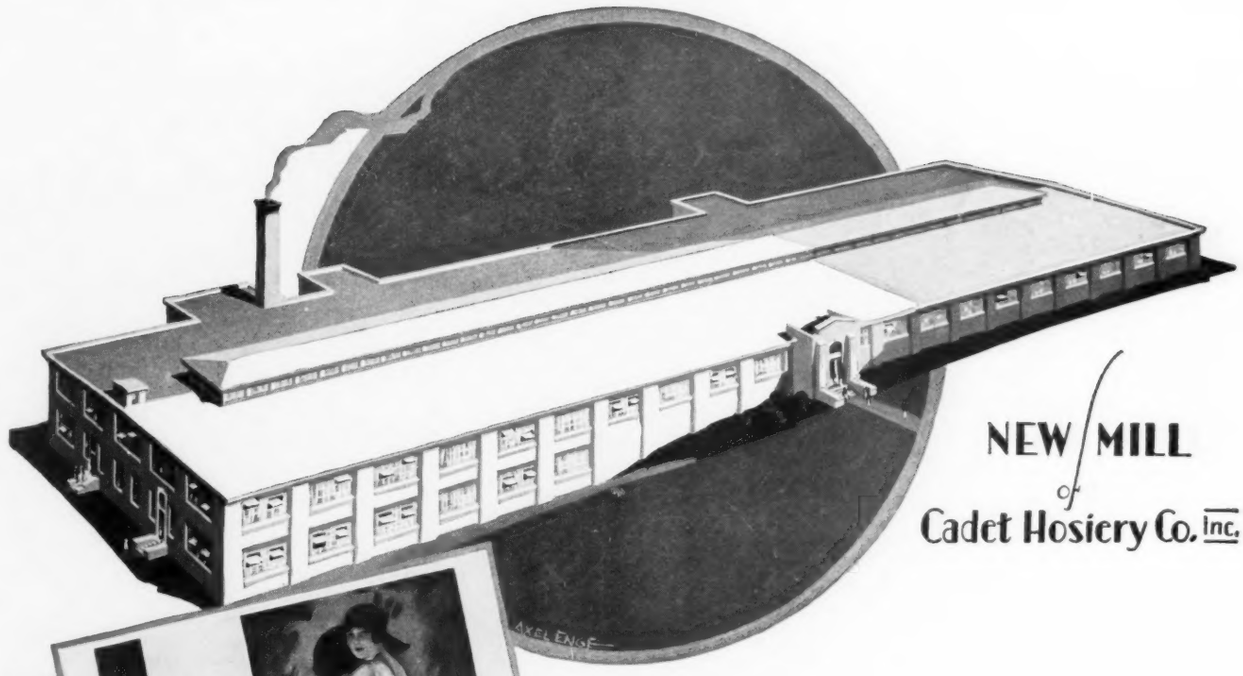
It comes out perfectly bleached



ANY pump-and-heater Kier can be adapted, with little expense, for the R & H system of Peroxide bleaching, which equalizes cost of old and new methods. Ask us!

The ROESSLER & HASSLACHER CHEMICAL CO.
10 East 40th St., New York, N. Y.

THE BEST IS NONE TOO GOOD!!



NEW MILL of Cadet Hosiery Co. Inc.

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In the hosiery field the name of Cadet is synonymous with style leadership. Ahead in styling—in manufacturing and merchandising methods, it is significant that such a Company chose us as the architects and engineers for their new mill.

Our specialization on the textile industry with the consequent intimate knowledge of each phase, from spinning to knitting, is a factor our clients in all branches of the industry have found of inestimable value.

Whether it is a mill village, a print and dye works or any other textile project, our past experience with similar propositions will be of great help to you.

On any industrial problem we will be glad to consult with you. Write us without obligation.

ROBERT AND COMPANY
ATLANTA INCORPORATED GEORGIA
Architects and Engineers

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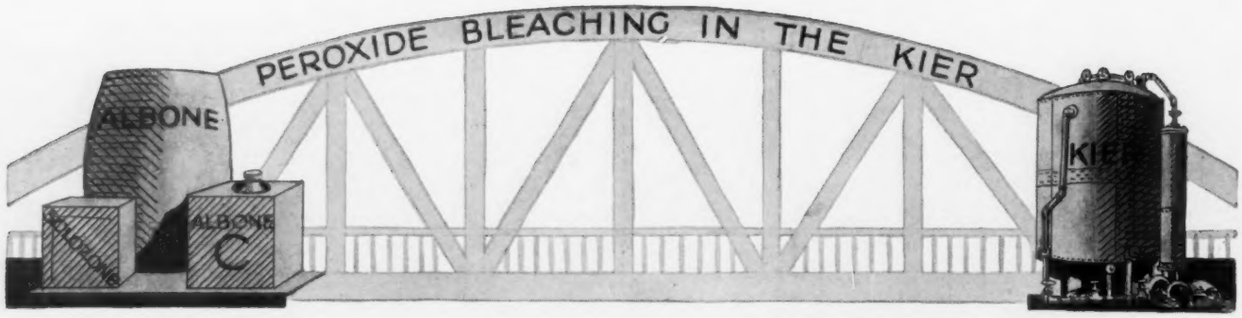
Fabrics by the Yard

Among Cotton's Readers

W. C. YORK,
Superintendent,
Sanford Cotton Mills,
Sanford, N. C.

"I HAVE BEEN reading COTTON for years and it has been a great help to me in solving the many perplexing problems that come up in the mill business. I consider that reading COTTON is a good way to keep me informed on textile problems."

W. C. York



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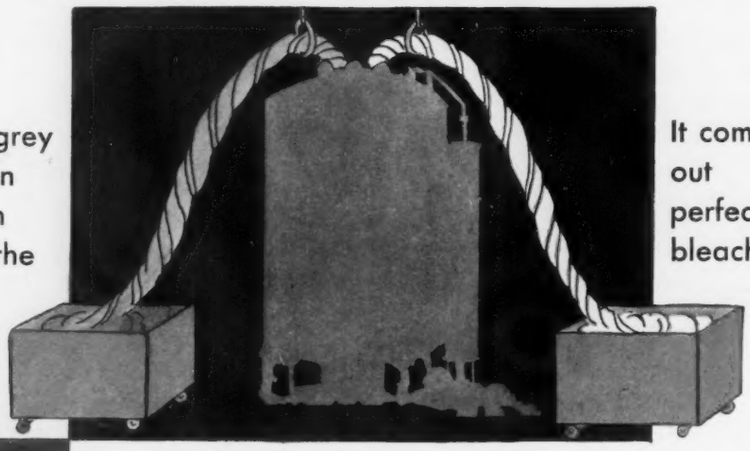

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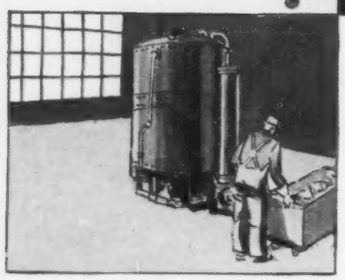

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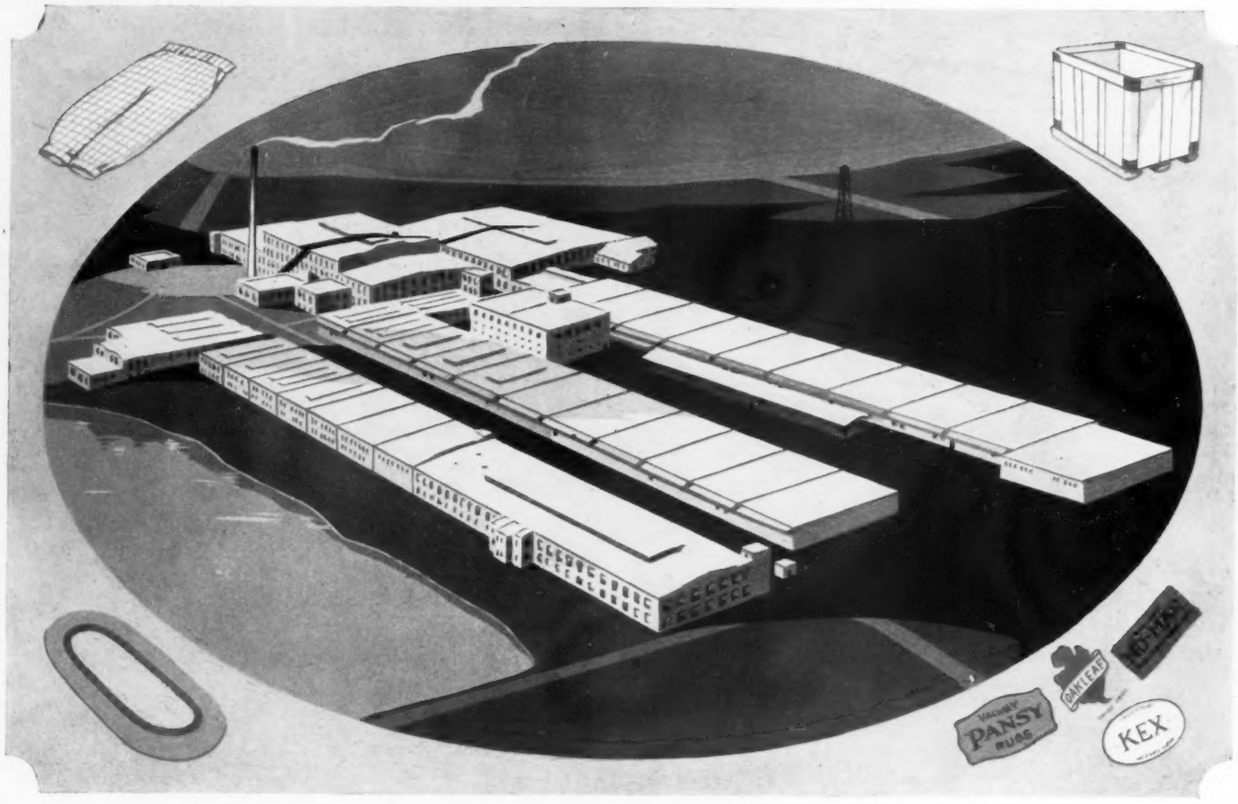

The Valway Rug Mills and the Hillside Cotton Mills of the Callaway group, another firm continuously utilizing the services of Robert and Company.

Vertical Expansion

ONLY a few years ago the Callaway interests made ducks, drills, yarns, twines, cord fabric, and filter fabric exclusively. Long noted as one of the country's wealthiest and most progressive textile firms they then sought an additional channel of profits.

Instead of adding new spinning and weaving mills they started to manufacture rugs, laundry baskets, laundry nets, towels, pants, wiping cloth and other products which could successfully be branded and whose actual superiorities could be advertised to the user. A radical move for a textile mill, but a sound one based on modern selling conditions and possible future profits.

Needless to state the Callaway interests have a dominant position in the industry and a versatility of manufacture which enables them to capitalize on any textile trend. The equipment of their Unity Cotton and Unity Spinning Mills, the Elm City Cotton Mills, Manchester Cotton Mills, the Hillside Cotton Mills, Valway Mills, Milstead Manufacturing Company is 110,000 spindles and 2,000 looms.

The architectural and engineering services for a firm of this character are most exacting in their demands. We feel it distinctly to our credit that we have been associated with them for many years as their architects and engineers.

Manufacturers whose problems are so diverse as those of the Callaway Group, manufacturers adding additional manufacturing units, manufacturers who ultimately will have several territorial manufacturing units, will find in our organization the broad national knowledge and ability to function that they desire. For information on location or any other data, write without obligation.

ROBERT AND COMPANY
ATLANTA INCORPORATED GEORGIA
Architects and Engineers

Celanese yarns, fabrics, and articles are made of synthetic products manufactured exclusively by the Celanese Corporation of America.

In The Men's Wear Field Today The Smartest Influence Is

CELANESE YARN

TRADE MARK REG. U.S. PAT. OFF.

The consistently high qualities of service and smartness which Celanese Yarn brings to every type of merchandise—knitted or woven—have had a particularly hearty reception in the men's wear field.

Half Hose . . . In men's half-hose, the exceptional characteristics of Celanese Yarn have become a valuable factor. New and unusual color effects are made possible, due to its unique cross-dyeing properties, when combined with other yarns.

Underwear . . . In men's underwear, the practical qualities of Celanese Yarn have become the standards for comfort and style. The fact that it permits bodily ease . . . holds its shape . . . launders easily without shrinking or stretching . . . and wears long . . . has made underwear of Celanese Yarn the first choice of the active man. Celanese Tricot and Lock-stitch Fabric are featured in shirts, shorts and union suits . . . and Celanese Twill in shorts.

Robes . . . The use of fabrics made either entirely of Celanese Yarn or in combination with other fibres, has added new practicality to men's lounging, travel, and beach robes, and established them as superior garments.

Accessories . . . Ties and scarfs owe a combined style and serviceability appeal to the use of Celanese Yarn in their manufacture.

And for Linings, too . . . The sturdiness of Celanese Yarn has also gained widespread recognition for its superior service in linings for men's coats and suits.

Celanese Yarn is being constantly introduced into new items of the man's wardrobe, and enjoys a unique position because it combines style appeal with these practical qualities:

It does not shrink or stretch.

It washes and cleans easily . . . dries quickly . . . and is not injured by perspiration or body acids.

It is comfortable to wear in all climates—keeping the body cool in summer and warm in winter.

CELANESE CORPORATION of AMERICA

180 Madison Ave., New York City

Charlotte, N. C., Office: 819 Johnston Building

Among Cotton's Readers

J. E. HARDIN
President, Asheville (N. C.) Cotton Mills; Secretary and General Manager: Proximity Mfg. Co., Proximity Cotton Mills, White Oak Cotton Mills, Revolution Cotton Mills, Proximity Print Works.
Photo, Blank-Stoller, Inc.

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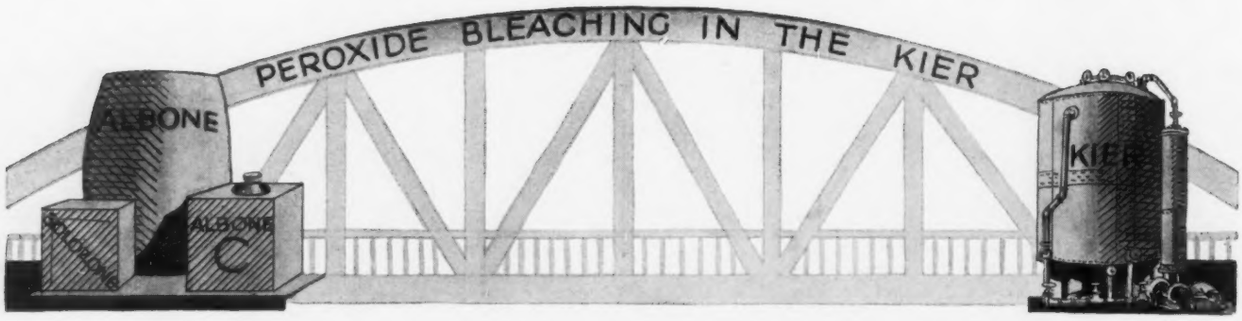
J. E. Hardin



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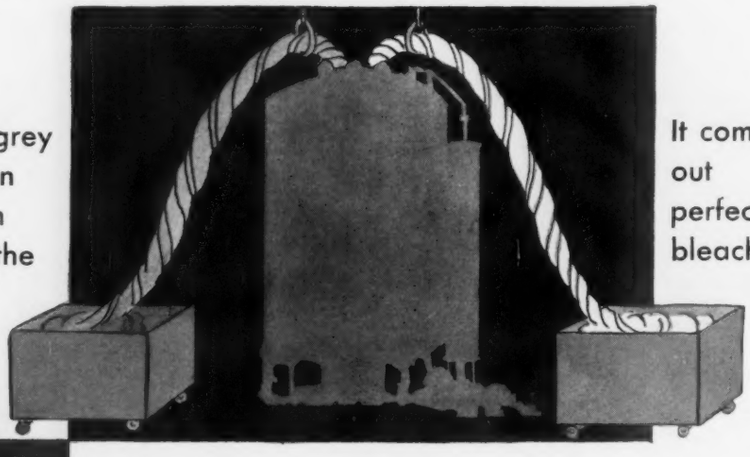

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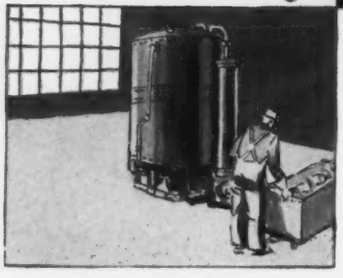

Visit our booth at the International Textile Exposition, Boston.

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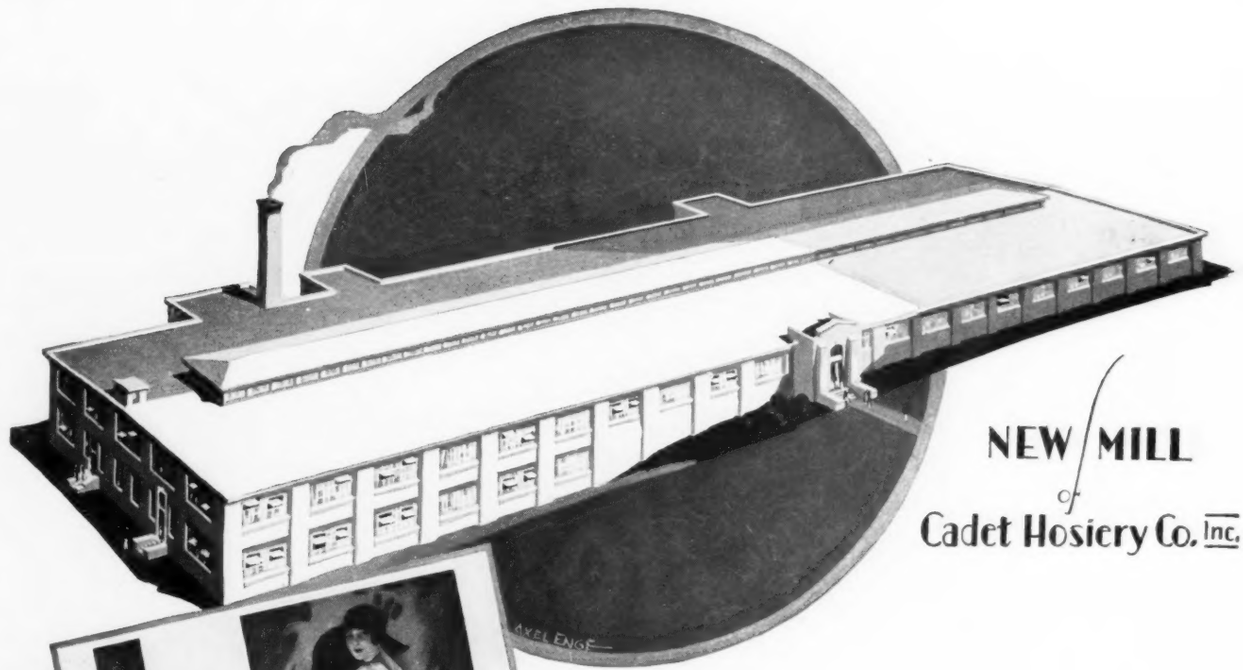

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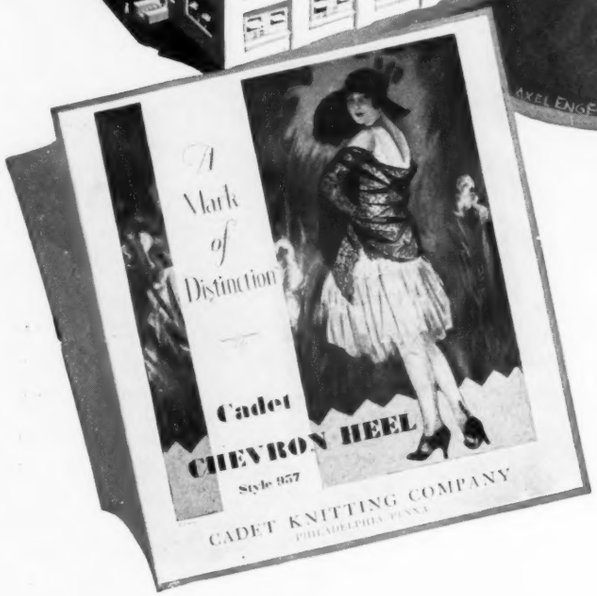

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MEN'S HOSE
MEN'S UNDERWEAR
WOMEN'S HOSIERY
Full-fashioned and Circular Knit
WOMEN'S UNDERWEAR
Flat Knit and Circular Knit
BATHING SUITS · KNITTED OUTERWEAR

In the Knitting Industry

CELANESE *Yarns*

TRADE MARK REG. U. S. PAT. OFF.

Lead the Quality Field

Visible proof of the superiority of Celanese in the field of fine synthetic yarns is furnished by the exhibit of merchandise knit of Celanese Yarn to be featured in the display of the Celanese Corporation of America at the Knitting Arts Exhibition. The products of the leading knitting mills of the country are represented in this collection.

A visit to the booth of the Celanese Corporation will demonstrate convincingly the superior merit of this merchandise. The Celanese display covers sections 342-344 and 368-370.

Celanese Yarn recommends itself particularly to the knitting industry because of its unique qualities, such as:

It lends itself perfectly to fabrics knit entirely of Celanese yarn.

When knit in conjunction with other textile fibres it has exceptional cross-dyeing properties.

It does not shrink or stretch.

It is not rotted by perspiration, body acids or sea water.

It retains only a minimum of moisture, and does not readily absorb dirt and stains.

It maintains its strength, when wet, exceptionally well.

Garments of Celanese Yarn wash easily, dry quickly, and keep their full body.

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CELANESE CORPORATION *of* AMERICA

180 MADISON AVENUE, NEW YORK CITY

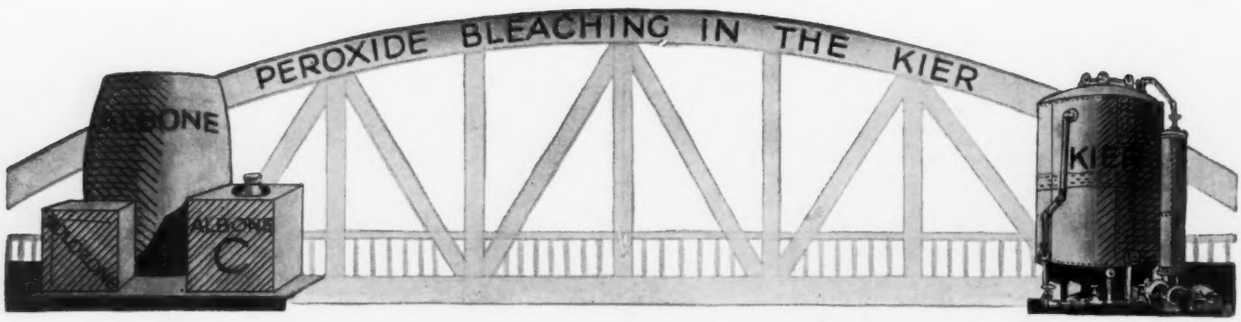
CHICAGO—318 West Adams Street
PHILADELPHIA—1046 Public Ledger Building
BOSTON—38 Chauncy Street
LOS ANGELES—819 Santee Street
CHARLOTTE, N. C.—819 Johnston Building

Among Cotton's Readers

WALDEMAR WALLNER,
GENERAL MANAGER,
Paul Knitting Mills, Incorporated,
Pulaski, Virginia.

"YOU ARE to be highly commended, not only on your publication, which contains a wealth of useful information and material for every person connected with the textile industry, but also for the unstinted cooperation you give those of your readers who call upon you to help solve their various problems."

Waldemar Wallner



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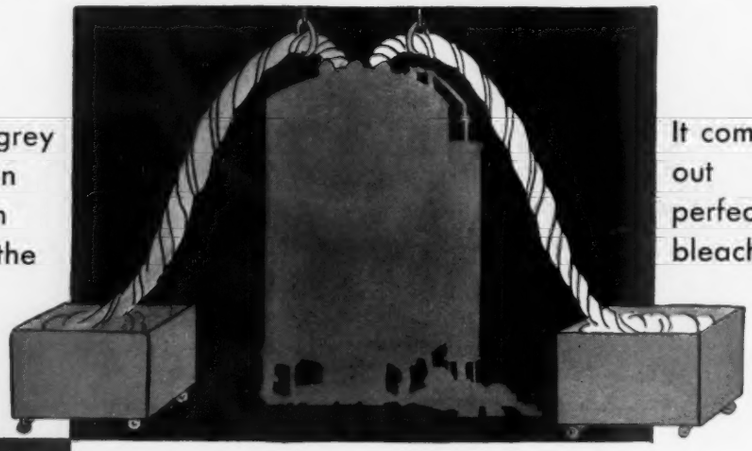

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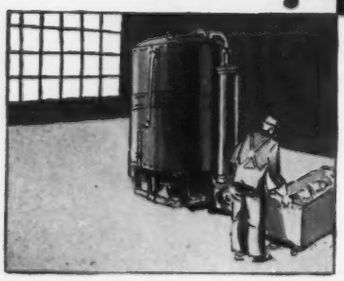

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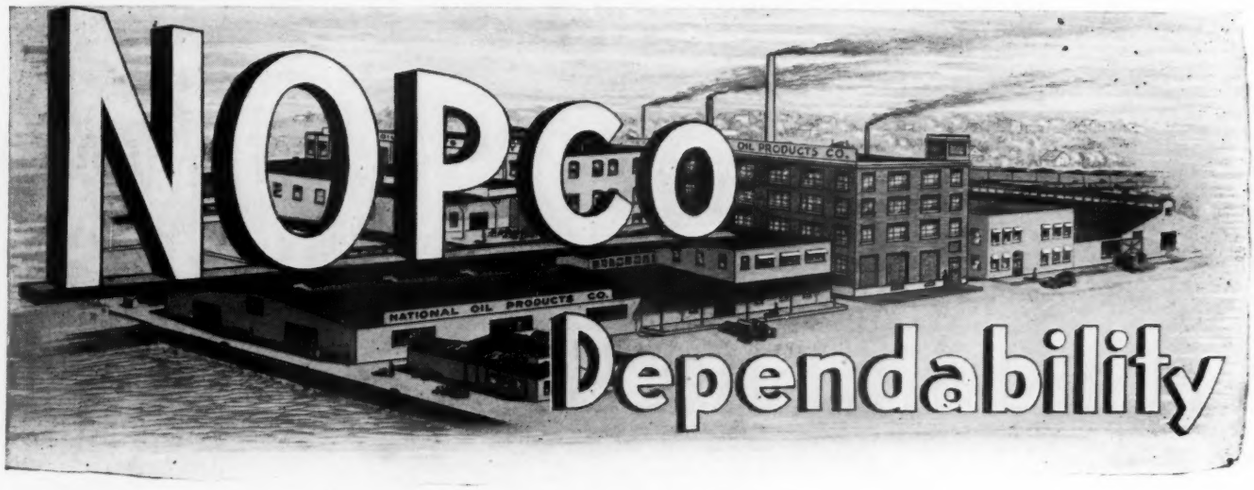


Announcing
TEXTOYL 1556

The Rayon Oil Supreme

Emulsifiable—Neutral—Non-Oxidizing

WE are happy to offer the rayon industry an emulsifiable oil which will immediately increase operating profits and make possible new standards of excellence.

TEXTOYL 1556 is not just another rayon oil. It is an emulsifiable oil with new and distinctive properties, never before combined in a single product.

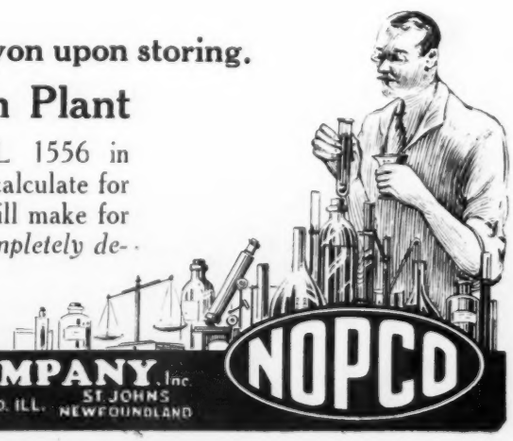
It has won enthusiastic approval from those well qualified to judge its merits.

Seven Reasons Why TEXTOYL 1556 Excels

1. **Practically neutral—only .15 of 1% free fatty acid.**
2. **Resistant to rancidity.**
3. **Resistant to oxidation.**
4. **Low viscosity—120 seconds on Saybolt viscosimeter.**
5. **Low moisture content.**
6. **Highly emulsifiable.**
7. **Does not weaken or yellow rayon upon storing.**

A Demonstration in Your Own Plant

Let us demonstrate the value of TEXTOYL 1556 in your own plant on your own goods. Then you can calculate for yourself the extra profits which this new rayon oil will make for your business. Write us today. *Ask for booklet completely describing TEXTOYL 1556.*



NATIONAL OIL PRODUCTS COMPANY, Inc.
EXECUTIVE OFFICES AND FACTORY **HARRISON, N. J.** BOSTON, MASS. CHICAGO, ILL. ST. JOHNS NEWFOUNDLAND

NOPCO

A DEMONSTRATION *of* TRUE VERSATILITY..

The established superiority of Celanese Yarns in the knit goods field was convincingly demonstrated by the Celanese display at the Knitting Arts Exhibition in Philadelphia. The versatility of Celanese and its many uses were demonstrated in fact—not talked about in theory. Made-up articles, loaned by leading mills of the country, showed how Celanese, used alone or in admixture with other fibres, has become the choice of the knitting industry. Its beauty, dependability and unique advantages tell why it has been chosen.

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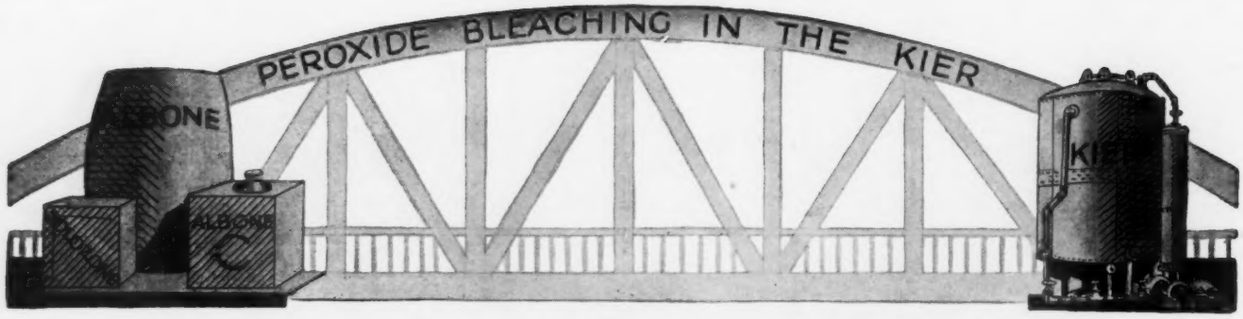
THOMAS M. DENNING,
General Superintendent,
Spinning Department,
Wiscassett Mills Company,
Albemarle, N. C.

"I CONSIDER COTTON a great contribution to the textile industry. It gives us information that cannot be obtained through any other medium."

Thos. M. Denning



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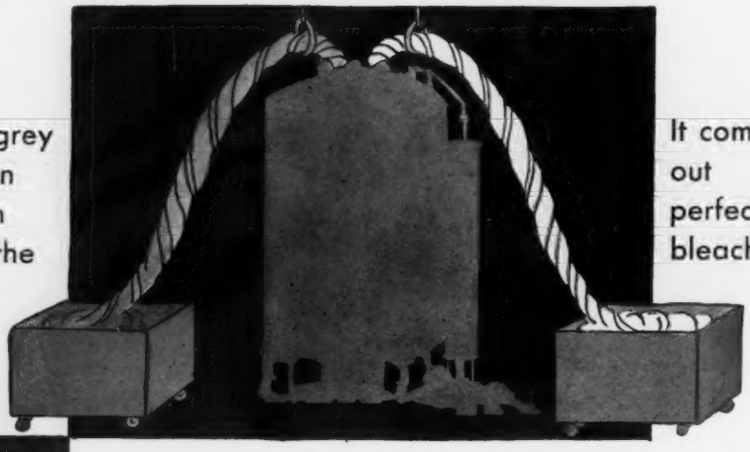

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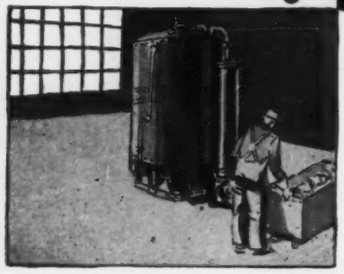

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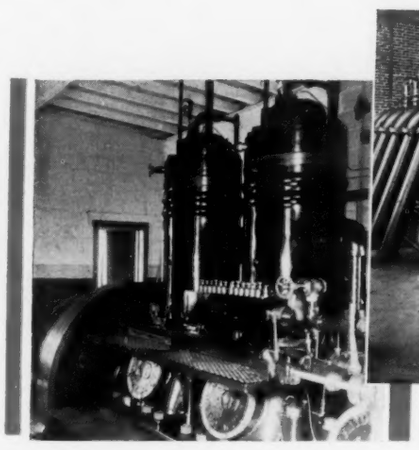
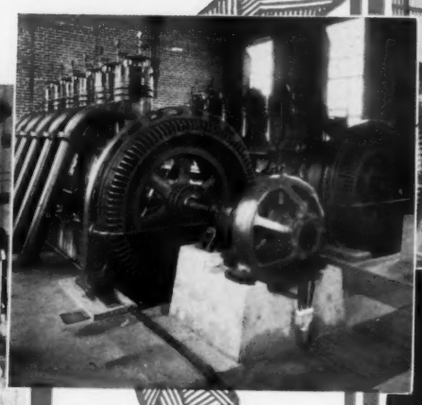
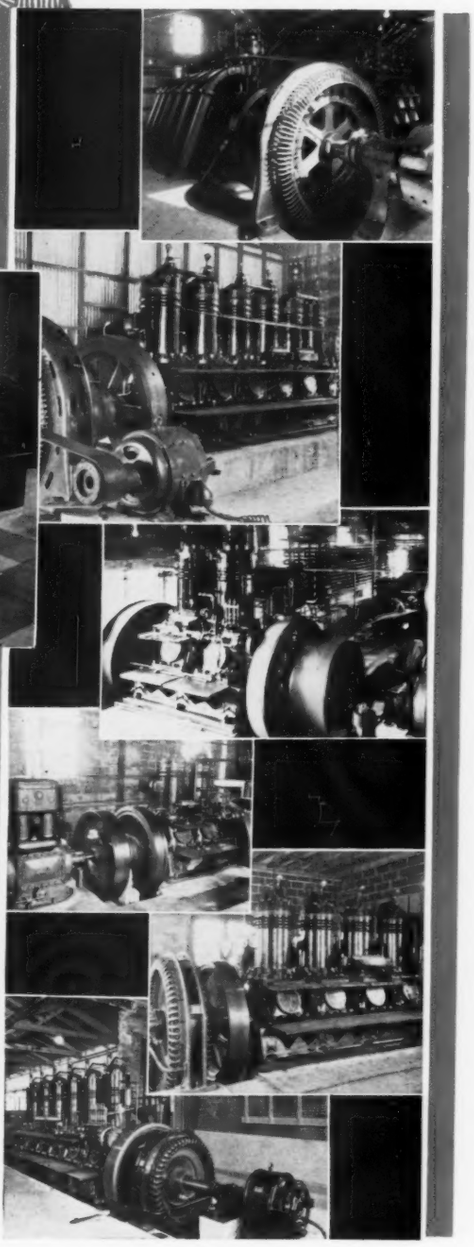
Where are your Profits going

DO YOUR POWER COSTS CONSUME THEM







Many a textile mill that rates top notch in efficiency, is letting its profits dwindle away in power costs—costs that exceed those of producing the same power with an Anderson Diesel. There's no good reason for it. Those same profits that are being wasted would soon pay the cost of an Anderson.

Here are a few of many installations, right in the heart of the coal country, where fuel for steam is cheap, and electric rates low, that are paying for themselves over and over again.

We would like to show some of the actual installations near you, have you see how dependably they operate—how economical they are—what real power efficiency is—and what real power savings mean. A letter, telegram, or phone call will get you quick action, and without the least obligation.

ASK ABOUT OUR PLAN OF FINANCING PURCHASE
ON DEFERRED PAYMENTS

ANDERSON
DIESEL ENGINES

ANDERSON ENGINE & FOUNDRY CO., ANDERSON, INDIANA

SALES AND SERVICE BRANCHES:

NEW YORK NEW ORLEANS DALLAS WACO SAN ANTONIO OKLAHOMA CITY

THE TRADEMARK

CELANESE

REG. U. S. PAT. OFF.

ALWAYS

Has Stood as a Symbol of Quality

STANDARDS of quality are no recent innovations with Celanese Yarns and Fabrics. Since Celanese was first produced in the United States, Celanese Corporation of America has maintained a policy which assures the consumer that any article of Celanese represents the highest quality of material and standards of manufacture.

Leading mills throughout the country have cooperated with Celanese Corporation in maintaining standard constructions, to their own benefit and the benefit of their customers. Representative garment manufacturers, who agreed to maintain definite standards of workmanship on garments made of fabric of Celanese Brand Yarn, have been permitted to attach labels bearing the name of Celanese as an identification of quality.

The remarkable success of Celanese has been due, not alone to this policy, but to the superior qualities of Celanese as well. Among the unique qualities of Celanese are the following:

Celanese — unlike any other type of yarn — positively does not shrink or stretch.

Celanese is not affected by perspiration, sea water or body acids.

Celanese does not rot or mold.

Celanese is an excellent insulator of electricity, and against heat or cold, thereby keeping the body cool in summer and warm in winter.

It launders easily, even in cold water, and dries with amazing rapidity. The more you wash it the better it looks.

Celanese "white" always stays white, never turning yellow.

Celanese colors are unusually fast to light and washing.

Since 1921 Celanese Corporation has pioneered in the development and maintenance of standards of quality in the synthetic textile industry.

Through all these years—to mill, manufacturer, retailer and consumer—the trademark Celanese has stood consistently as a symbol of quality.

Celanese Corporation of America

180 MADISON AVENUE, NEW YORK CITY

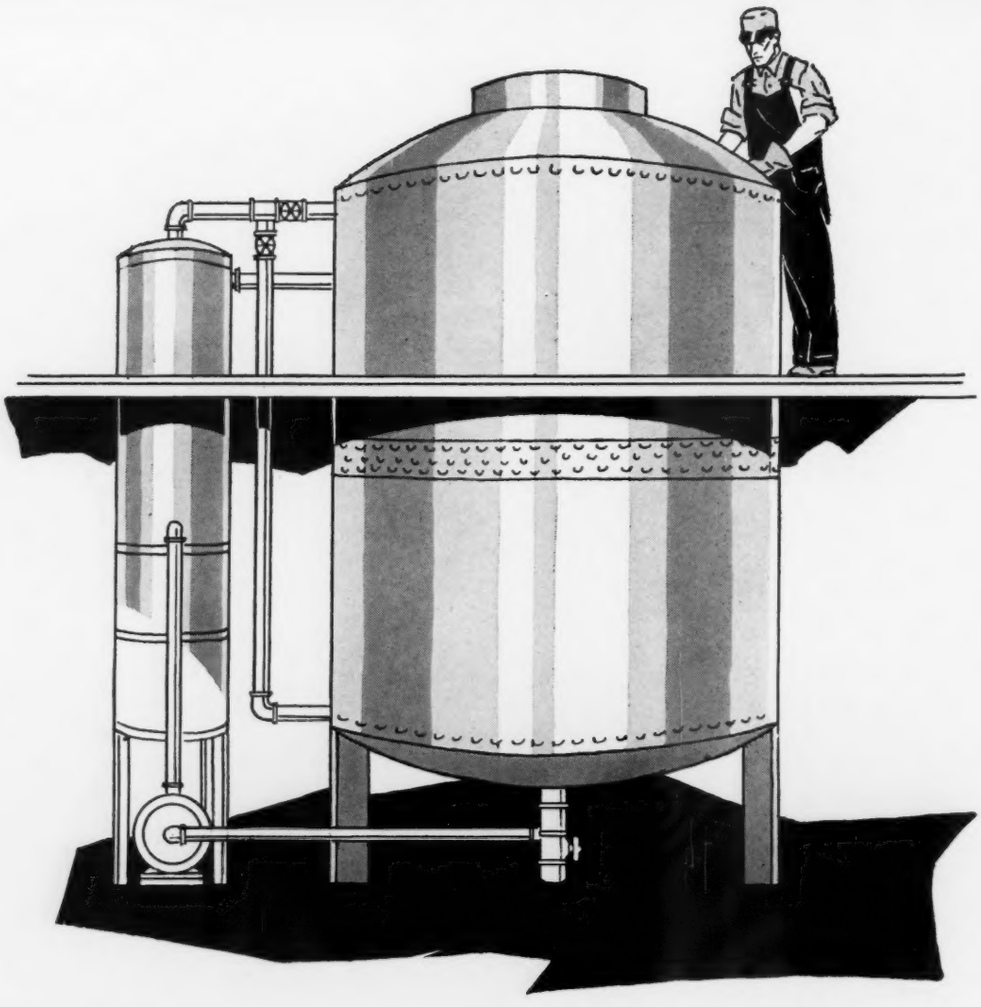
Celanese yarns, fabrics and articles are made with synthetic products manufactured exclusively by the Celanese Corporation of America.

Among Cotton's Readers

L. G. HOOPER,
Superintendent,
Jewel Cotton Mills, Inc.,
Thomasville, N. C.

"I CONSIDER COTTON one of the best magazines published for cotton mill men. It is a reliable and useful source of information pertaining to cotton manufacturing."

L. G. Hooper



R&H INTRODUCED PEROXIDE BLEACHING TO THE KIER

BEFORE: 13 operations; 24 hours; damage, seconds; unevenness.

NOW: 3 operations; 8 hours; perfect results.

THE grey cotton is run into the kier . . . It comes out perfectly bleached.

Any kier can be adapted, with little expense, for the R & H system of Peroxide bleaching, which equalizes cost of old and new methods. Ask us!

Makers of
ALBONE
(25 vol.)
ALBONE "C"
(100 vol. Electrolytic)
PEROXIDES
PERBORATES
SOLOZONE
(130 vol.)

R&H CHEMICALS

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10 EAST 40th STREET, NEW YORK, N. Y.

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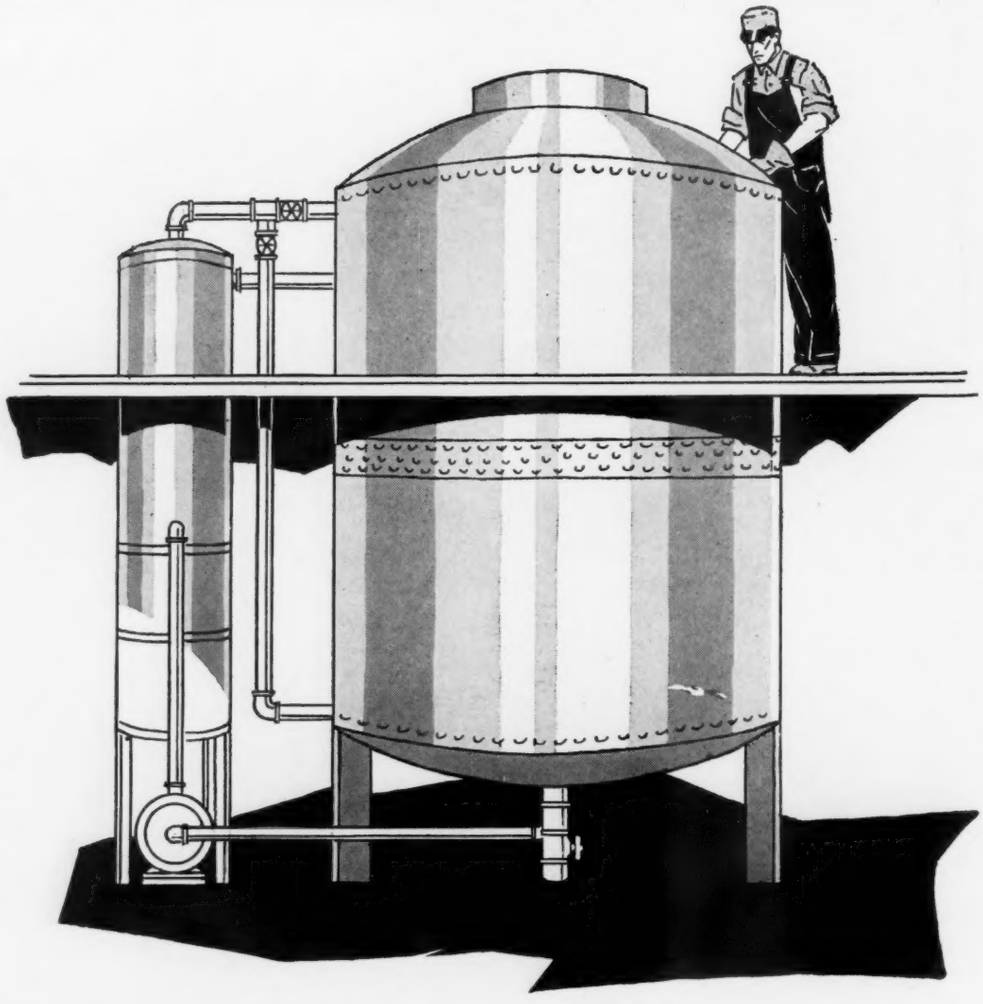
Gen. Mgr., and Supt.,
Samoset Cotton Mills,
Talladega, Ala.

"I READ COTTON with great interest, and believe that to our industry, it is one of the most valuable of the textile publications."

J. G. Chapman



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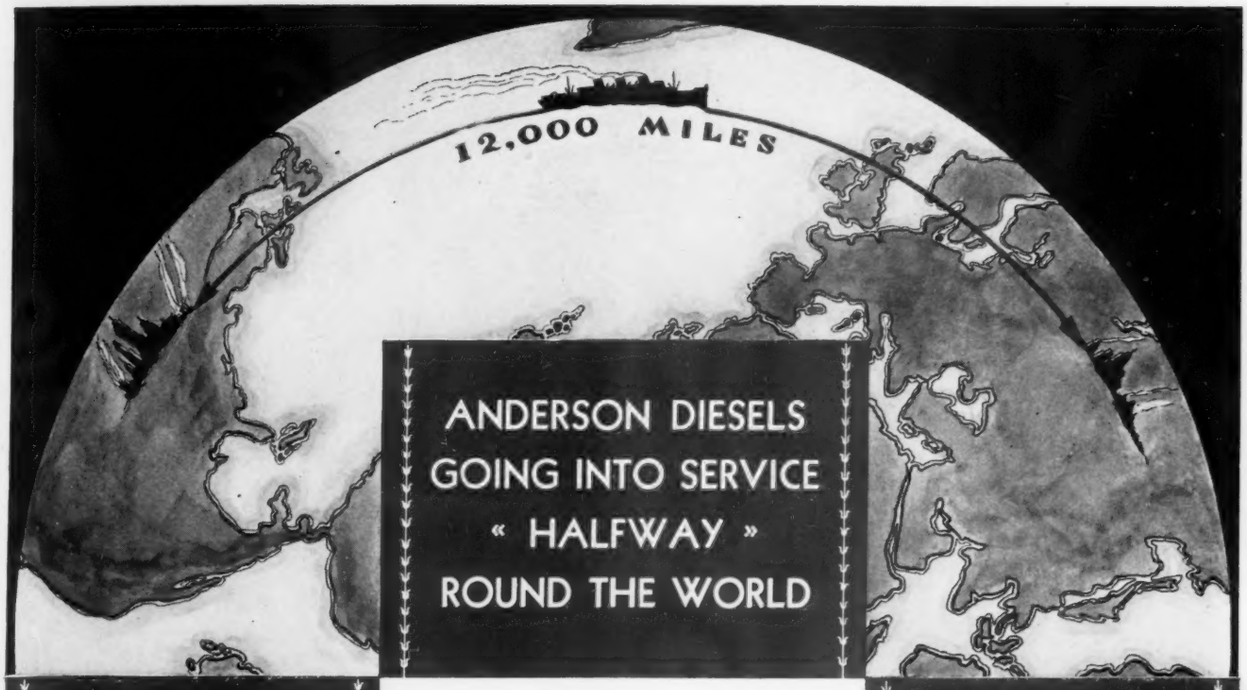
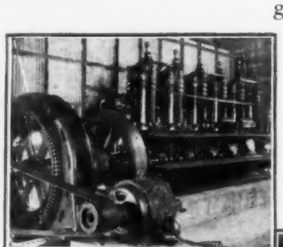
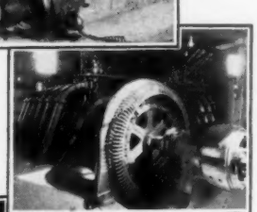
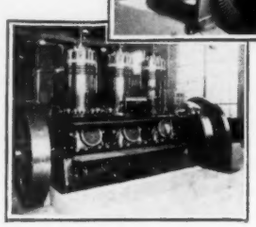
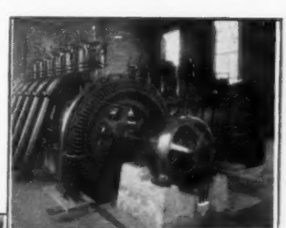
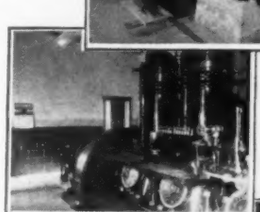
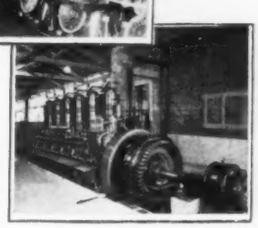


ANDERSON DIESELS
GOING INTO SERVICE
« HALFWAY »
ROUND THE WORLD

DEPENDABILITY
SIMPLICITY

HEAVY DUTY
ECONOMICAL

ONE of the large European powers sent their engineers to this country to select prime movers for a large industrial project. After carefully checking up on specifications and operating efficiencies of over fifteen different makes of Diesel Engines, ANDERSON DIESELS were selected for the job. Absolute dependability, extreme simplicity, and utmost economy were the deciding factors in favor of ANDERSON DIESELS. *Dependability,* because these engines are to be operated over 12,000 miles from the factory. The heavy-duty features of the ANDERSON, such as oversize crankshaft, oversize bearings, and generous proportions throughout, mean greater freedom from troublesome shutdowns, and servicing. *Extreme simplicity,* because these engines are to be be put into hands of inexperienced operators. ANDERSON DIESELS do not require skilled engineers. *Utmost economy,* because of the high cost of fuel and lubricating oil in the country in which these engines will be operated. ¶ While these factors are of extreme importance when Diesels are to be operated so far from the "home base," they are of equal importance to local installations, and have been the deciding factors in many installations in industrial plants and utility plants, in both this country and abroad.

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ANDERSON
DIESEL ENGINES

ANDERSON ENGINE & FOUNDRY CO., ANDERSON, INDIANA

In Our 59th Year of Successful Operation

SALES AND SERVICE BRANCHES:

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One Grade Only—
The Finest Quality

CELANESE

TRADE MARK REG. U. S. PAT. OFF.

YARNS

Celanese Has the Following Superior Qualities:

It will not shrink or stretch

Is not harmed by perspiration, body acids, or sea water

Is unaffected by dampness

Will not mold or mildew

Launders easily, and dries rapidly

Its colors are unusually fast

Its "white" never turns yellow

To every weaver and knitter who finds his fabrics of first quality yarn continually undersold by similar constructions made of the identical brand of yarn, inferior in grade and bought at a cut price—Celanese Yarn offers the solution.

Celanese Yarns are sold on a single quality standard only. There is but one grade of Celanese, *the first.* In specifying Celanese Yarn, a mill is assured of receiving the finest modern yarn that science is able to produce.

The policy of Celanese Corporation of America in maintaining a single quality standard for every pound of yarn it produces removes the danger of unfair competition. Under this policy, mills, converters, garment manufacturers, and retailers are protected from being undersold on fabrics of sub-standard yarn, cut in price because of inferior yarn bought at lower costs.

Preference for Celanese Yarns is due, not only to the steadfast adherence to the single quality standard, but to the unique qualities of Celanese Yarn—unlike any other type of textile fibre.

Celanese Corporation *of* America

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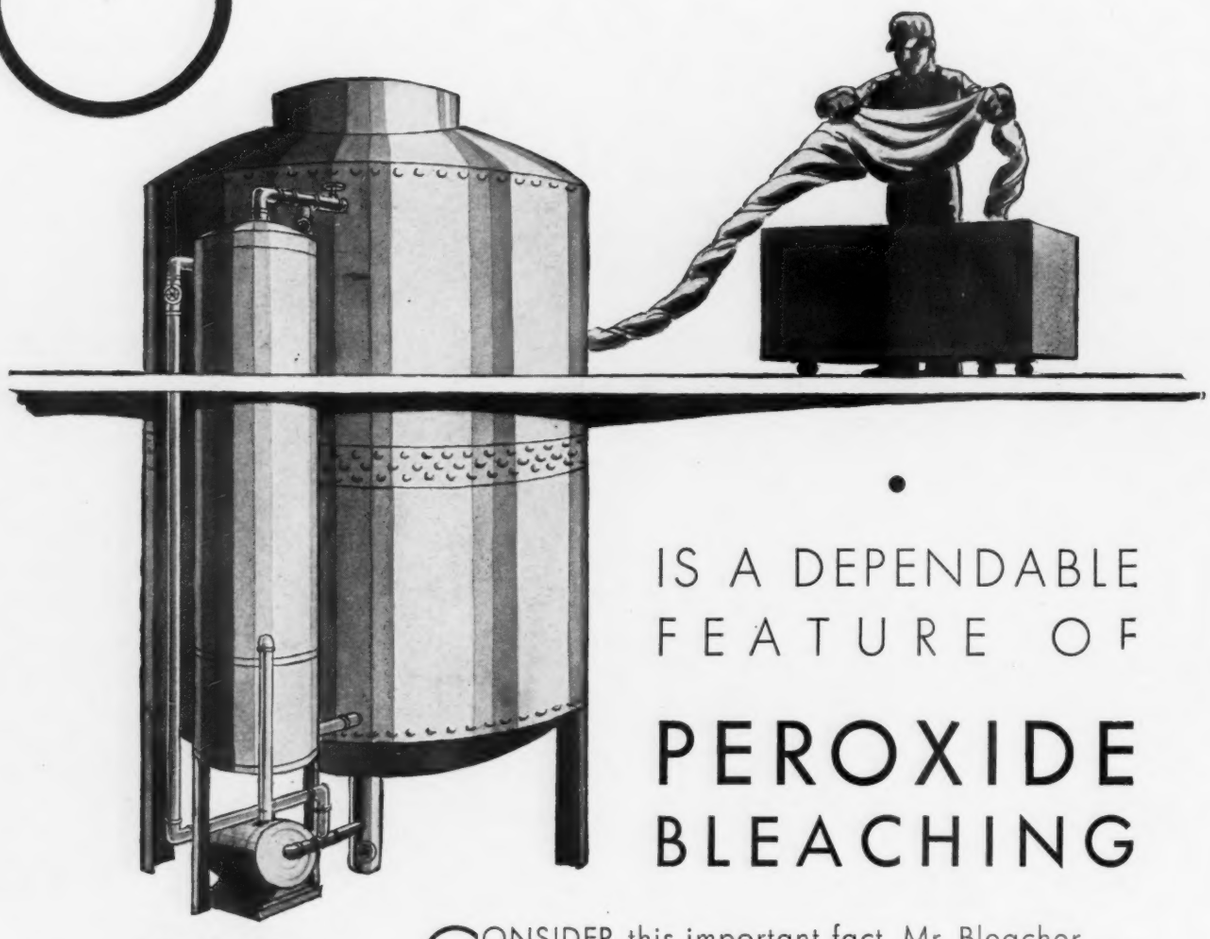
FRANK E. HEYMER
Superintendent,
Piedmont Cotton Mills,
Egan, Ga.

"I CONSIDER COTTON the most practical textile paper published, and I give it more time than any other, because in my opinion it contains more real practical information that has been tried out by actual experience. Old-Timer's philosophy is always sound and refreshing, and we readers always tackle our problems with renewed energy after we read his articles."

Frank E. Heymer

UNIFORMITY



IS A DEPENDABLE FEATURE OF

PEROXIDE BLEACHING

R&H

ALBONE (25 vol.)
ALBONE "C"
(100 vol. electrolytic)
PERBORATES
HYDROGEN PEROXIDE
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CONSIDER this important fact, Mr. Bleacher.... Peroxide Bleaching always produces a good, marketable white.

Peroxide Bleaching always produces a good white for use as a dye bottom or base.

Write for information on adapting, at little expense, any kier for the R & H System of Peroxide bleaching. The cost of old and new methods are thereby equalized.

At the Southern Textile Exposition, Greenville, S. C., October 20th to 25th inclusive, visit our Booths Nos. 311, 312 and 313

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10 East 40th Street, New York, N. Y.

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General Superintendent,
Alabama Mills Company,
Birmingham, Ala.

"COTTON is the one magazine that I never fail to read and that I request my superintendents to read. I do not consider that a man engaged in the textile industry could keep abreast of the times without it. It has meant a great deal to me."

Roscoe Roberts

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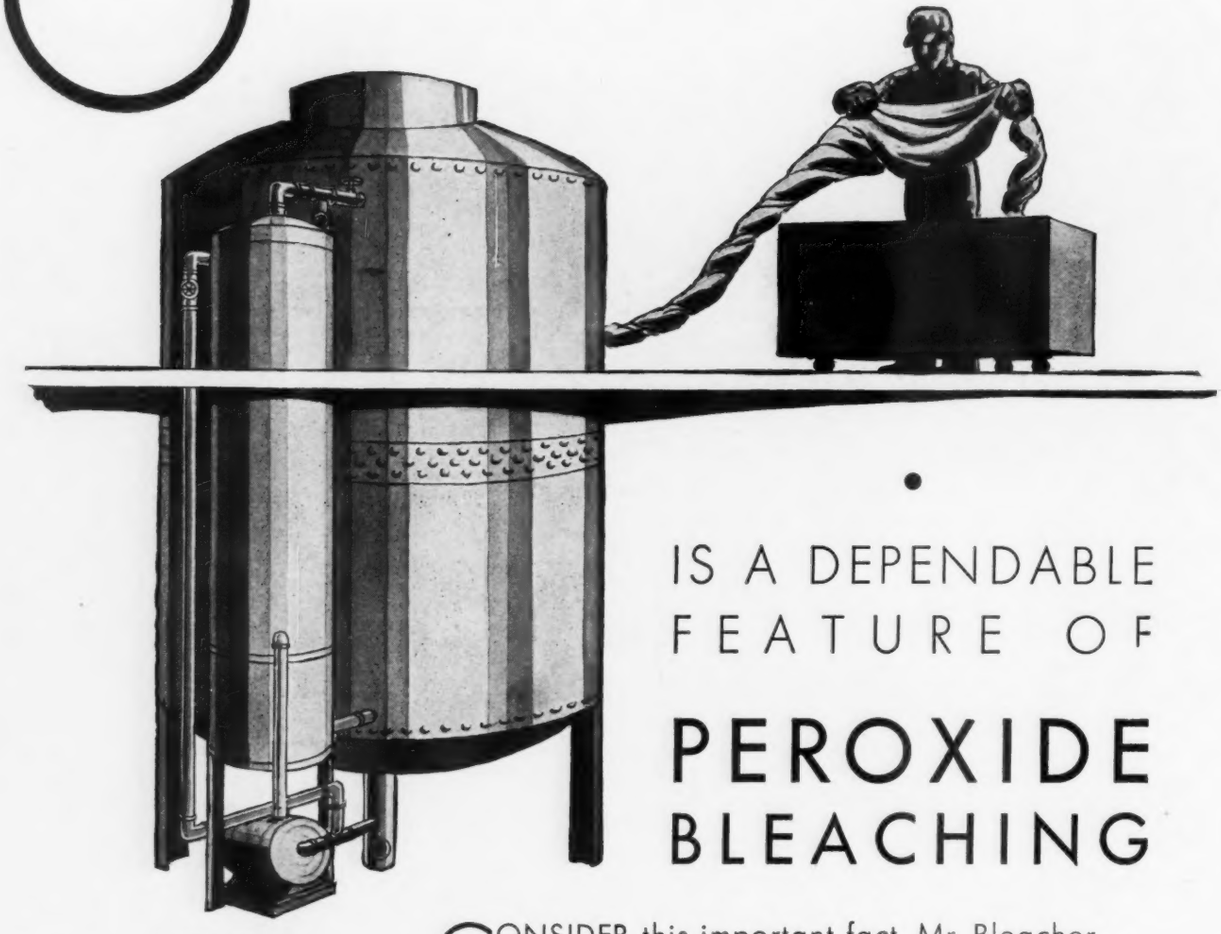

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More Rayon Fabrics
Are Being Woven
On Northrop Looms
Than on Any Other
Automatic Loom

Draper Corporation

HOPEDALE MASSACHUSETTS

SOUTHERN OFFICES

ATLANTA GEORGIA SPARTANBURG SOUTH CAROLINA

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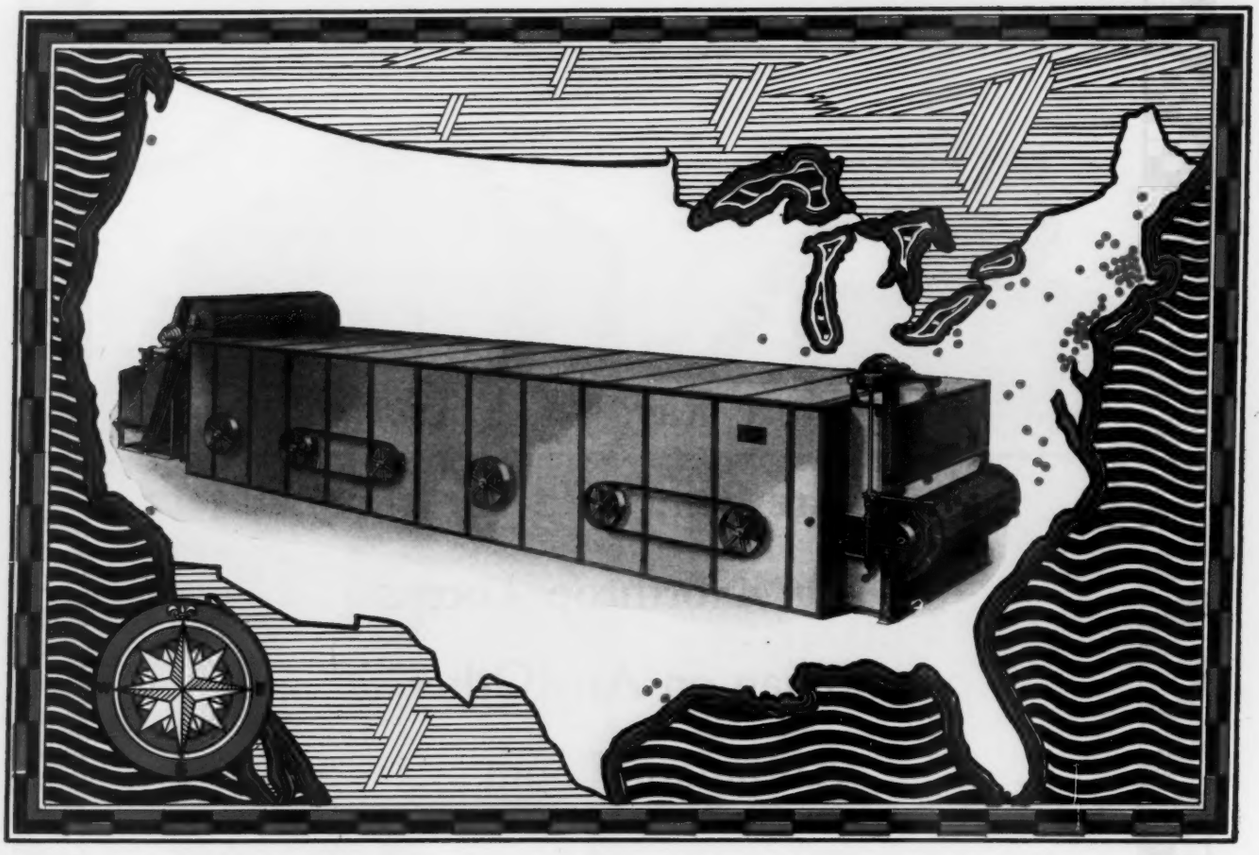
Spreading over the country . . . the New Proctor Super Stock Dryer!



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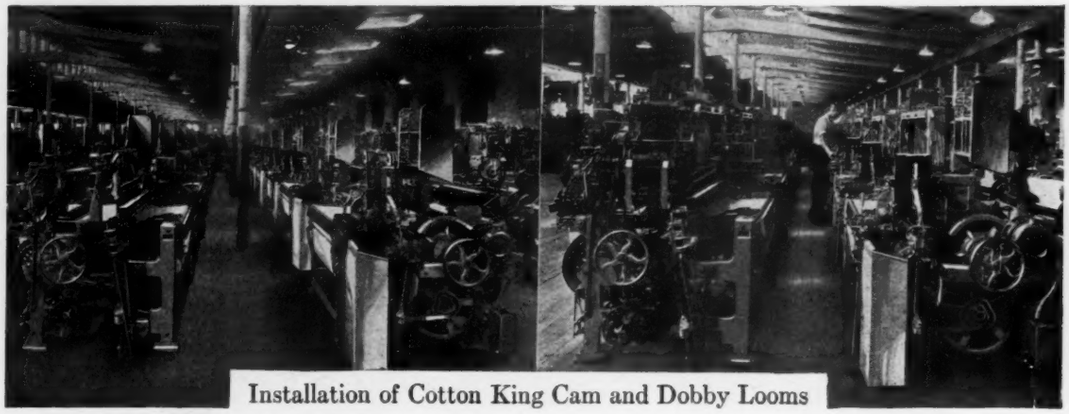
THE Proctor Dryer for Raw Stock, of the new *Super* type, has been adopted by Cotton dyers and bleachers . . . by wool dyers and scourers . . . by processors of many other fibrous and loose materials . . . in textile centers all over the country. Introduced only three years ago . . . to an industry already well provided with relatively efficient drying methods. . . the rapid growth of installations is explained only by the fact that the Super Dryer consistently proves its superiority in high capacity per unit of floor space and per dollar of operating cost. Its savings pay a high return. Its facility of operation and freedom from mechanical troubles mean a new order of satisfaction in drying.

PROCTOR & SCHWARTZ · INC · PHILADELPHIA

LOOM·INARIES·OF·THE·TEXTILE·INDUSTRY

COMPARATIVE TESTS

in the *same mill* . . .
on *identical fabrics*

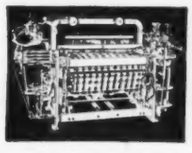


Installation of Cotton King Cam and Dobby Looms

..have proved the flexibility of the new

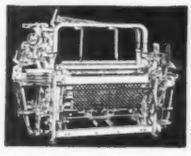
CROMPTON & KNOWLES COTTON KING Automatic Loom

over a wide range of materials. These tests have also demonstrated its greater productive capacity due to higher speed, steadier weaving, and easier fixing.



Cam Loom

Dobby Loom



CROMPTON & KNOWLES LOOM WORKS

WORCESTER, MASS.

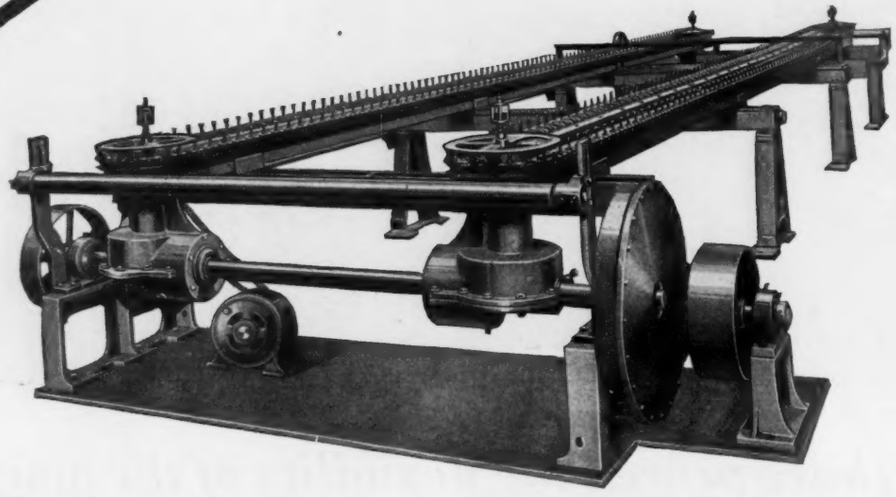
PROVIDENCE, R.I. PHILADELPHIA, PA. ALLENTOWN, PA. PATERSON, N.J.
S. B. ALEXANDER, SOUTHERN MANAGER - - - CHARLOTTE, N. C.

BUTTERWORTH ANTI-FRICTION . . . . . TENTERING MACHINES

SAVE . . . . . POWER

ARE SMOOTHER IN OPERATION

HAVE LONG LIFE AND FREEDOM FROM REPAIRS



Butterworth Anti-Friction Tentering Machines are ball and roller bearing type, having Butterworth worm and worm gear width adjustment and fully immersed bearings.

Butterworth Tenters are made to stand a generous overload, although there is no excess metal in any part of the machine.

That we might be able to make prompt shipment of any part needed for Butterworth Anti-Friction Tentering Machine we maintain at all times a stock comprising every part used in Butterworth Anti-Friction Tenters up to 90 ft. in length.

Complete details of Butterworth Anti-Friction Tentering Machine will be mailed promptly upon request.

H. W. BUTTERWORTH & SONS CO.

Established 1820

PHILADELPHIA, PA. PLANTS at PHILADELPHIA and BETHAYRES, PA.

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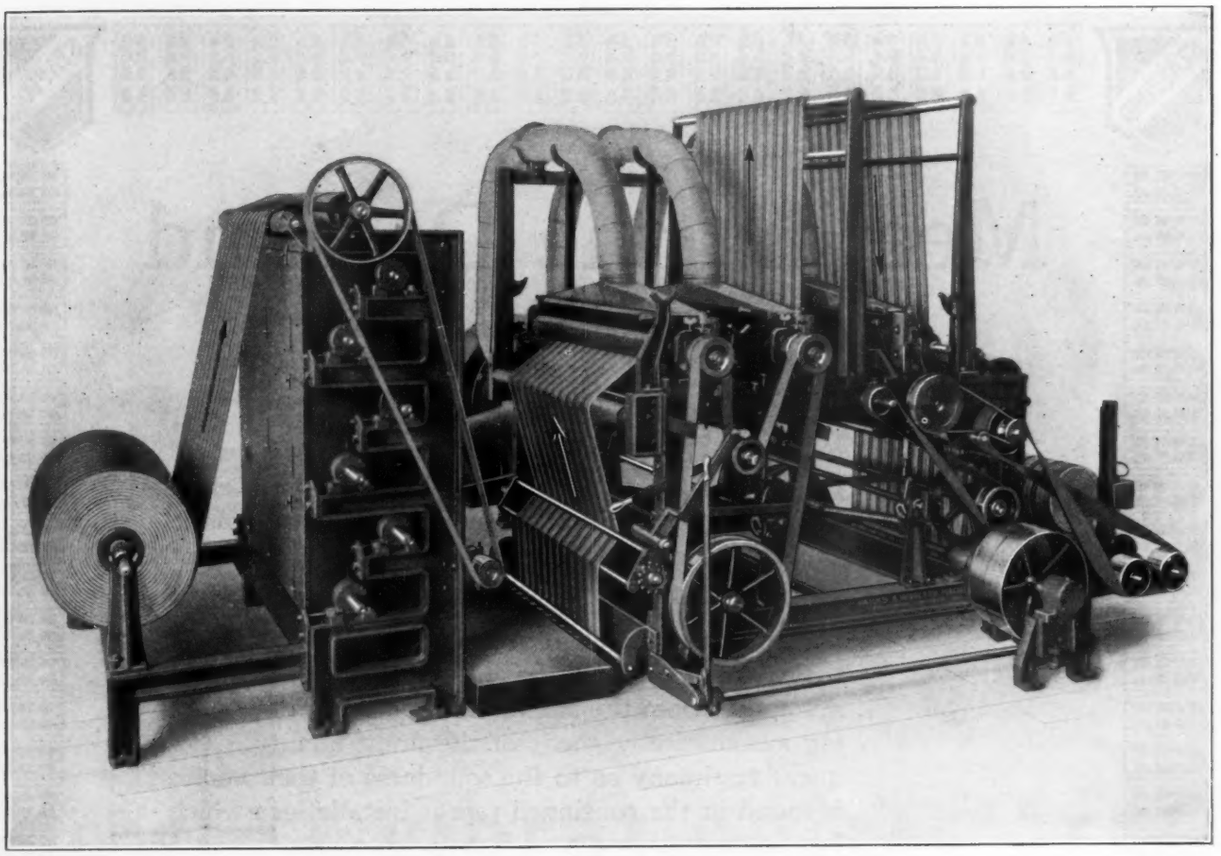
BUTTERWORTH *Finishing* MACHINERY

A COMPLETE LINE OF FINISHING MACHINERY FOR THE TEXTILE INDUSTRY



50-inch Lancaster Trimming Shear with Brushing Unit

Shears so sharp they cut *costs*!

HOW do you trim your goods? . . . by hand? . . . with an old brusher? . . . with an antique Shear? . . . If so, we want to tell you how you can effect a possible saving of from 60 to 100 percent in your trimming and examining costs.

There is a new super-machine to do this work . . . The Lancaster Trimming Shear. It swiftly and cleanly removes loose threads, broken ends, knots, bunches, etc., from the goods. It does this far better than is possible by hand and it automatically eliminates practically all of your hand trimmers and examiners. It produces over 20,000 yards per day. It saves a tremendous amount of floor space. It is operated by one man. It requires only a comparatively small outlay, which may be extended over a generous period if you wish.

This new machine is built by Shear specialists—builders in 1826 of the first in this country and the leaders since. It is a beautifully designed, rugged piece of apparatus, fully ball bearing equipped. It has a new suction system of tremendous power, and the world's finest blades. It is advisedly called a "super-machine."

We sell the machine with a guarantee of satisfaction and service—a guarantee from a conservative and fully responsible concern that has enjoyed an enviable reputation for square shooting for over a century—an important point to you.

We ask nothing but to demonstrate on your goods. If we cannot improve your present methods, we will tell you frankly. If you expect something the machine won't do, we will tell you so. We will make no promises that cannot be fulfilled.

Isn't it worth a talk with our representative?

PARKS & WOOLSON MACHINE COMPANY SPRINGFIELD VERMONT

Southern Representative
P. B. RAIFORD, JR., CONCORD, N. C.

New York Office
36 WEST 34TH STREET

P & W Equipment for Cloth Rooms and Finishing Plants

Trimming Shears—Napped Goods Shears—Nappers—Brushes—Machinery for Measuring, Winding, Rolling, Folding, Doubling, Inspecting, Sewing and Trademarking all Cotton goods.

Meeting the Demand

A GENUINE demand for the product of your mill can be created if the quality of your cloth is superior to your competitor's. Stafford automatic looms produce cloth unsurpassed in quality at a cost that meets the keenest competition.

Numerous prominent mills noted for the quality of their woven product have found in the Stafford automatic loom the answer to the problem of weaving automatically goods of the finest quality. Eloquent testimony as to the soundness of their choice is found in the continued repeat installations which have followed.

Remember this: the Stafford loom is particularly easy to operate. All parts are handy for the fixer (an aid to low maintenance cost), and they will stand the gaff of constant operation because they are built well.

We would like to co-operate with you, tell you where our looms may be seen in operation, and in any other way demonstrate our desire to serve and our ability to help you.

Full information will be gladly sent on request to mill executives who would like to know more about the Stafford automatic loom and the service it is rendering to the textile industry.

THE STAFFORD COMPANY

Makers of Bobbin-Changing and Shuttle-Changing Automatic Looms and other Weaving Machinery

READVILLE, MASSACHUSETTS

Southern Agent . . . . . FRED. H. WHITE, Charlotte, N. C.
Paterson Office . . . . . 179 Ellison Street, Paterson, N. J.

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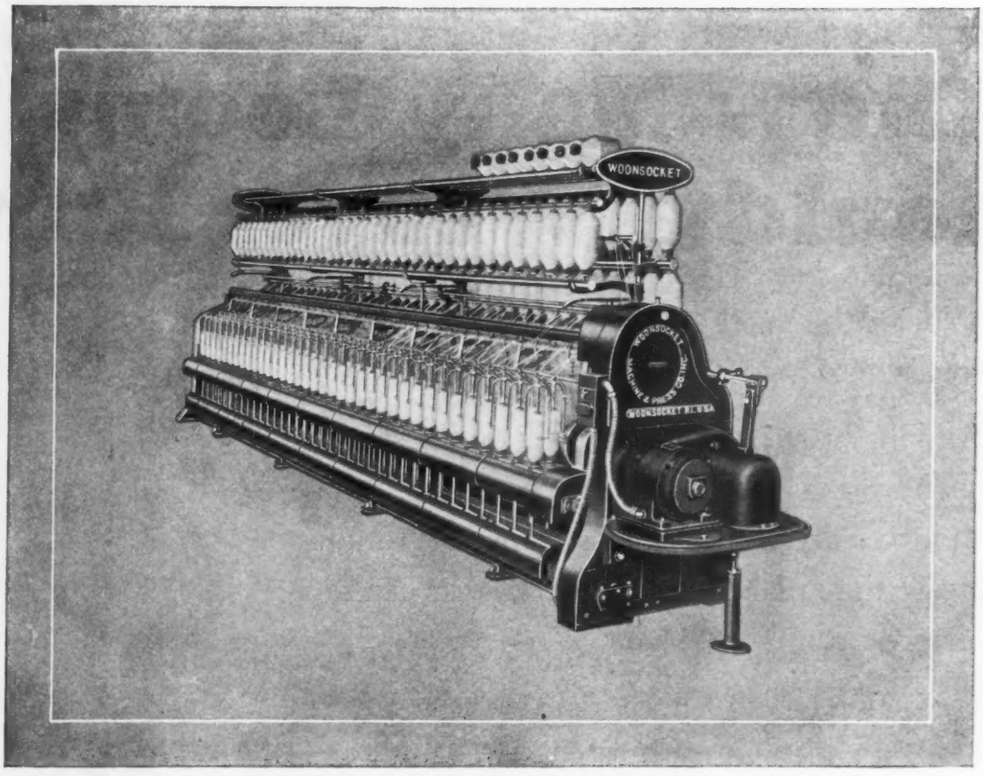


Now—a vibrationless creel on Woonsocket Roving Frames

"The roving flows as smoothly as water."

"The roving flows as smoothly as water" from this new all-metal creel of tubular steel construction with inserted porcelain steps for the skewers. This latest exclusive Woonsocket feature has various advantages. It is so rigid that vibration is eliminated. It is cleaner; no flat surfaces to collect lint. The construction admits more light to the center of the room. It is very durable —practically indestructible.

This fine new feature, plus Woonsocket's many other desirable points such as chain drive horsehead, Daly spur gear compound, patent tension regulator, ball bearing top rolls, individual motor drive—all these combine to form the reason why many of the largest and more successful mills today are equipped or are gradually replacing old machines with new Woonsocket Frames.

Cotton Machinery

WOONSOCKET MACHINE AND PRESS CO., Inc.
OPENING, PICKER, CARDER, DRAWING AND ROVING MACHINERY
WOONSOCKET, R. I.

FALES & JENKS MACHINE COMPANY
SPINNING AND TWISTING MACHINERY
PAWTUCKET, R. I.

EASTON & BURNHAM MACHINE COMPANY
SPOOLING, WARPING AND WINDING MACHINERY
PAWTUCKET, R. I.

from Bale to Loom

Export Office: PAWTUCKET, R. I. *Southern Office:* WOODSIDE BUILDING, GREENVILLE, S. C.

How Many Looms Should a Weaver Run?

It depends chiefly on the number of warp breaks per hour, per loom.

And the warp breakage depends on the strength of the yarn. Increase the strength of the yarn, and you decrease the loom stoppage, and increase the number of looms a weaver can satisfactorily run.

All of which is well known to every Superintendent and Manager, yet a great many of them are checking their breaking strength on an antiquated and unreliable testing machine.

Automatic Power Yarn & Cloth Tester

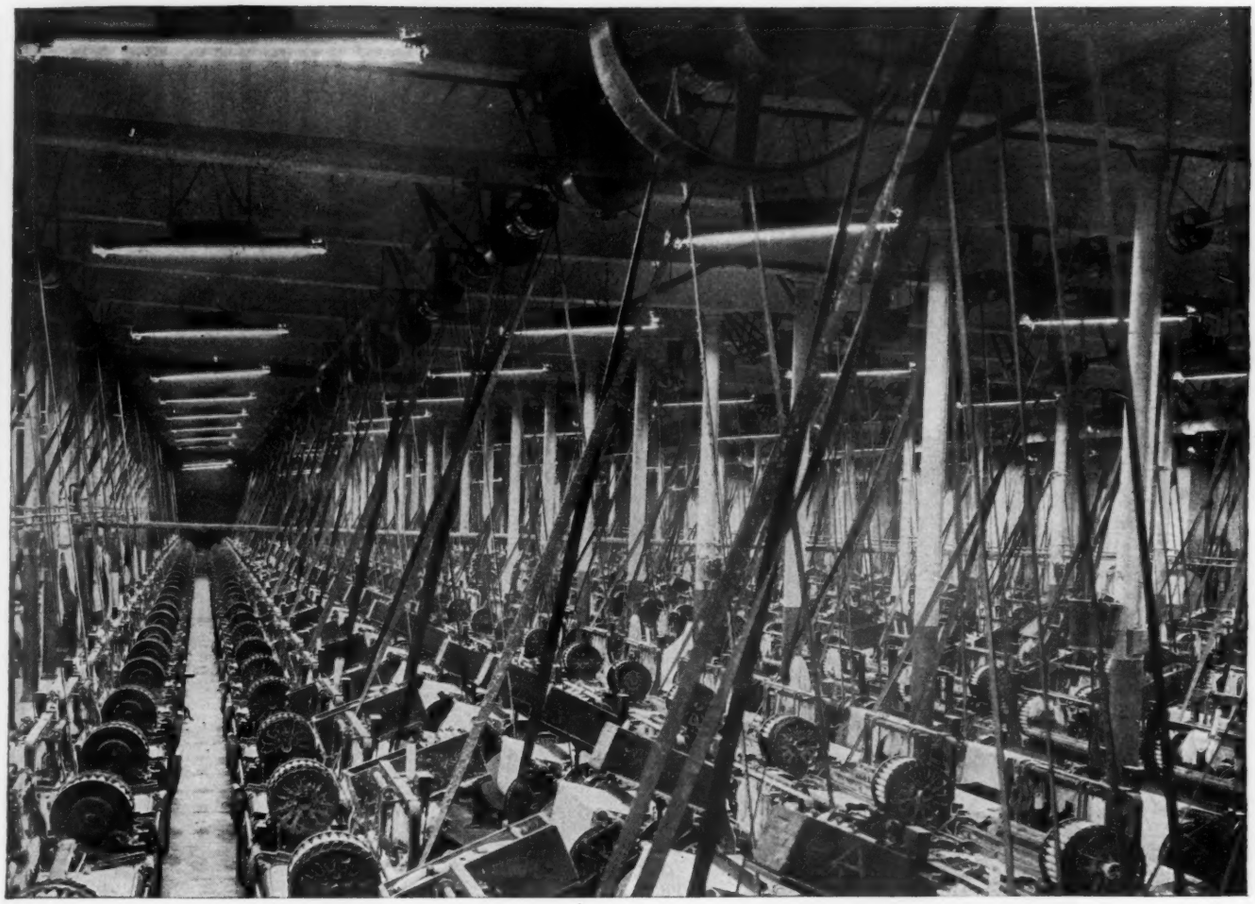
You can keep your breaking strength high if you don't even know what it is. A Scott Automatic Power Driven Tester is the World's Standard for textile testing purposes, and can be absolutely depended upon for accuracy.

The cost of owning one is small compared with the satisfaction of knowing what you are doing.

AldricH MachinE

Greenwood, WorkS South Carolina

An Aldrich Cylinder Beater Will Protect the Strength of Your Yarn by Not Damaging the Staple in Picking



404 © C. H. E. Co., 1929

Thus dark shadows are banished even from a forest of belts

Not a mere claim—but a statement of fact

Cooper Hewitts are "better than daylight" not only because they give constant intensity at any hour but because they yield 90% yellow-green (the best-seeing) rays, and have none of the glare-producing qualities which are hard on the eyes. As a result, every detail becomes sharp and clear as if magnified, vision is more acute and the response of brain and hand is more rapid.

SOMETIMES the question is asked: How does Cooper Hewitt light eliminate dark shadows? How does it reach in and around and under all parts of machinery and make even the shadows so luminous that all small details can be clearly seen?

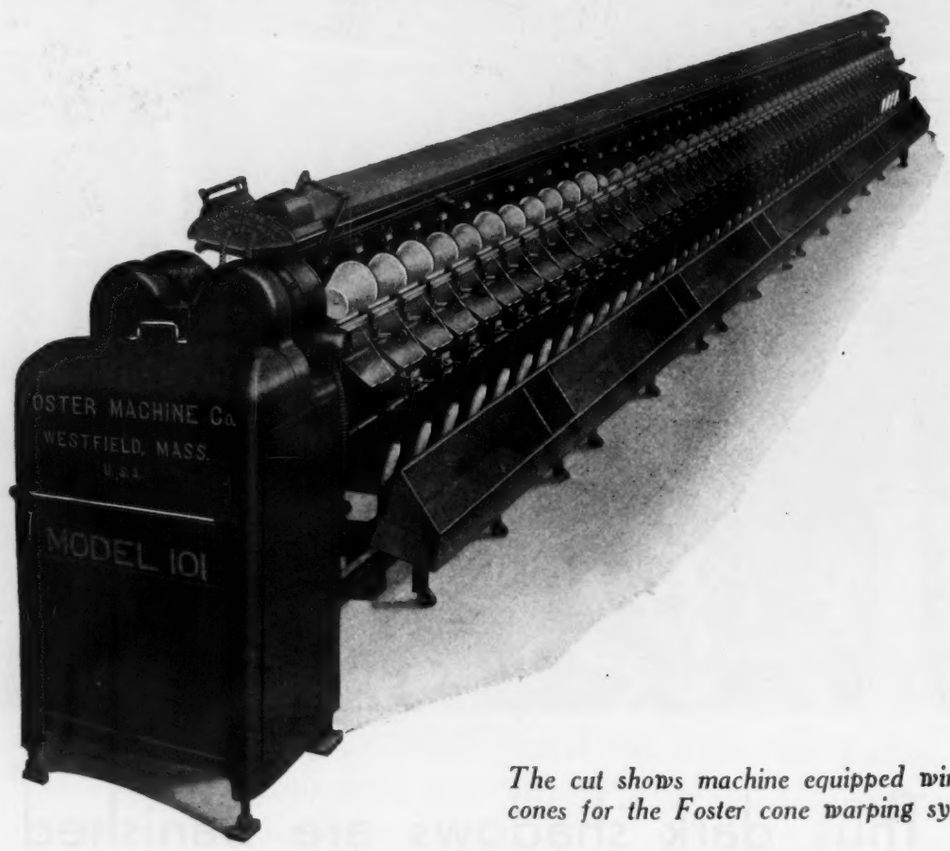
In the photograph above is the answer. Here, in the American Printing Company's plant at Fall River, Mass., you see Cooper Hewitt light literally surrounding hundreds of belts and pillars. The long (50 inch) tubes of radiant mercury vapor, installed by Cooper Hewitt illuminating engineers, make every smallest detail of the machinery stand out as sharply and clearly as if magnified. Despite the forest-like appearance of this machine-filled room, no dark shadows interfere with the quick, accurate vision of operatives.

This is but one of *many* advantages of Cooper Hewitt light. May we prove them *all* by a trial installation in your own plant? There's no obligation. Just address: Cooper Hewitt Electric Co., 853 Adams St., Hoboken, N. J.

COOPER HEWITT

A General Electric Organization

The FOSTER *Model 101 "Gear-Head"* WINDER



The cut shows machine equipped winding cones for the Foster cone warping system.

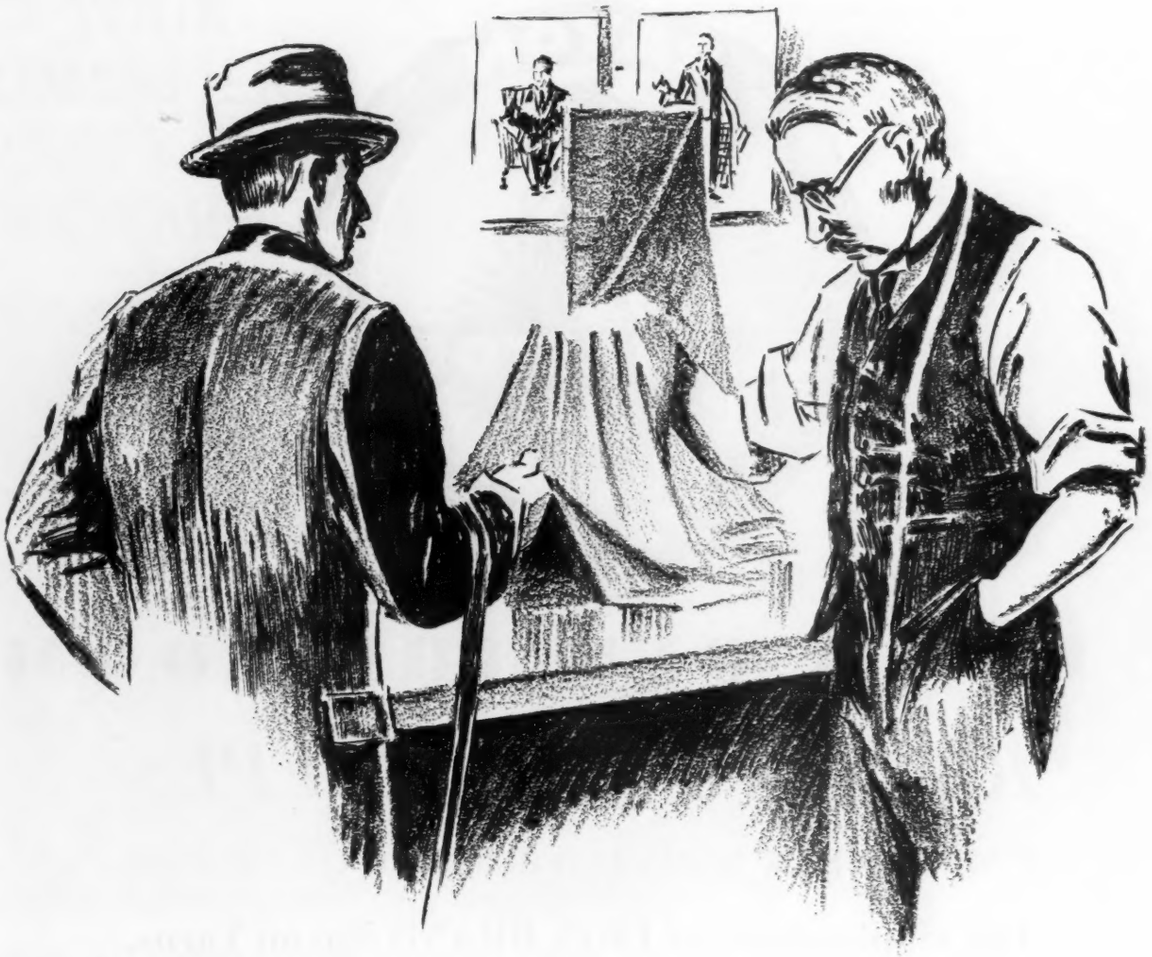
ALL pulleys and belting used in the head end of former models is replaced in this model with gearing. Metal gears meshing with non-metal to prevent excessive noise and wear.

The gearing secures a positive non-slip action and holds the yarn winding speed and guide speed at an exact ratio.

FOSTER MACHINE COMPANY

Westfield, Mass.

John Hill, Southern Representative,
Healey Bldg., Atlanta, Ga.



Is it YOUR *fabric he selects?*

THE price must be right and he must like the cloth.

While your problem does not start and end with carding and napping, clothing plays an important part in the cost and quality of the finished product.

Wissco improves quality, for with lower manufacturing costs, more money is available for raw stock and finish.

Carding with Wissco is cheaper because the clothing stays sharp and less frequent grinding time means greater production time.

Wissco Napping is better because less energy is required and fewer runs through the napper are needed.

Wissco Napper Clothing costs less because it wears twice or three times as long as ordinary clothing. It produces a fuller and more uniform nap.

Let us send the Wissco Engineer to see you. He will show you an old way to persuade Mr. Consumer to select your cloth.

Wickwire Spencer Steel Company
47 East 42nd Street, New York City

Chicago Cleveland Atlanta San Francisco Charlotte

WICKWIRE SPENCER

WISSCO CARD and NAPPER CLOTHING

A BOOM OFF THE LOOM!

RAYON FLAT CREPES

TO BROAD SILK MANUFACTURERS AND CONVERTERS

The employment of LION BRAND Rayon Yarns, for Warp and Weft, has been the means of developing the better grades of Rayon Flat Crepes, Plain and Printed, to their present perfected state of beauty and excellence.

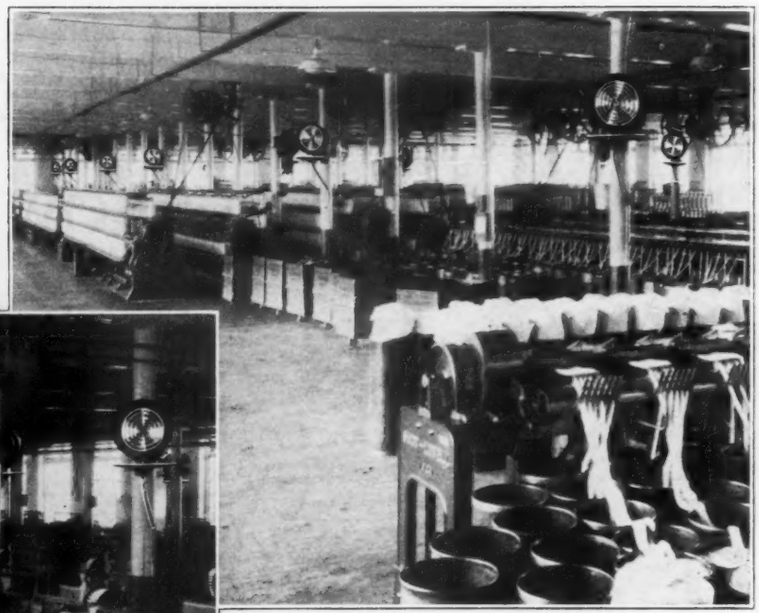
The Services of our Technical Department are at your disposal to aid you in solving any of your Rayon weaving or finishing problems.

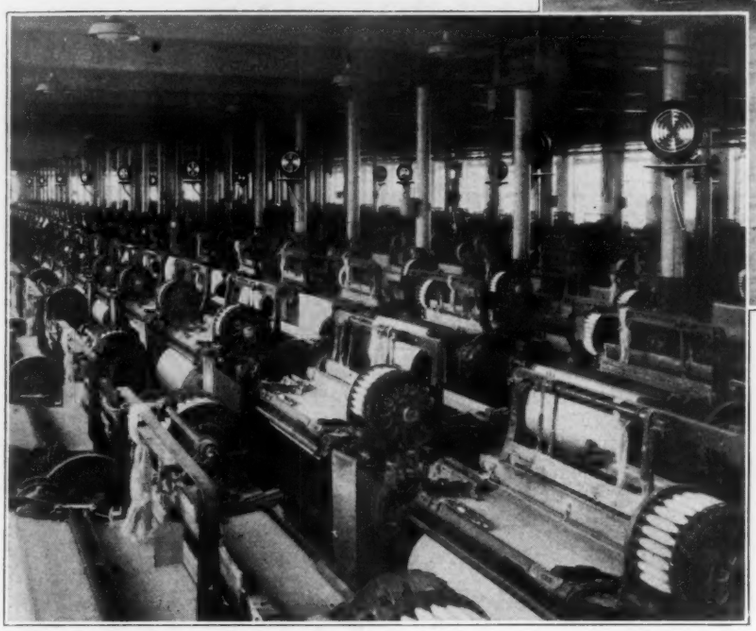
AMERICAN GLANZSTOFF CORPORATION
180 MADISON AVENUE, NEW YORK

MAKERS OF

GLANZSTOFF
"LION BRAND RAYON"

DO YOUR HUMIDIFIERS JUSTIFY YOUR INVESTMENT?





THESE DO!

BAHNSON INSTALLATION at LOWE MFG. CO., HUNTSVILLE, ALA.

MUCH of the success of humidification results from the performance of each individual unit.

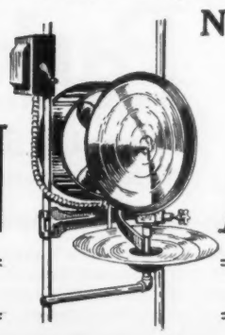
The installation at the Lowe Manufacturing Company at Huntsville, Alabama, is a good example of the ability of the New Bahnson Humidifiers to produce a uniform relative humidity throughout entire rooms where such a condition is required.

Correct humidification will improve your working conditions and products also. Write for information on the New Bahnson Line.

THE BAHNSON COMPANY

Humidification Engineers

Winston Salem, N. C. **New York Office: 93 Worth St.**



The BAHNSON *Humidifier*

HEALTH — QUALITY — AND EFFICIENCY

"Maximum-- allowable regain is accurately maintained in all our mills."

... says a textile mill executive.

With the most complete line of devices—we sell *Air Conditioning Engineering.* The devices are selected to suit your needs.

MILLS operated by the same company above and below the Maryland line, where atmospheric conditions are widely different, maintain their allowable regain with almost absolute accuracy.

Figure your own extra profits if you could maintain your full allowable regain. No doubt you would pay for your ParkSpray installation within a year and still show a profit on the investment... Most mills do.

Each ParkSpray System is installed from engineering data and accurate surveys of each particular mill... that's how mills below the Maryland line hold regain at full allowance the same as mills in colder climates.

A ParkSpray engineer is usually roaming around in textile territories and is available to discuss humidification problems without the least obligation.

ParkSpray
Humidification Systems

Fitchburg, Mass. — PARKS-CRAMER CO. — Charlotte, N. C.

CANADA: Parks-Cramer Westaway Co., Ltd., Main and McNab, Hamilton, Ont.; 455 Craig West, Montreal, P. Q. CHINA: Elbrook, Inc., Shanghai; Pekin; Tientsen. GREAT BRITAIN, IRELAND: Cook & Co., Manchester, Ltd., 18, Exchange Street, Manchester, England. CONTINENTAL EUROPE: Compagnie Ingersoll-Rand, Paris, France. INDIA: Ingersoll-Rand (of India) Ltd., Bombay, Calcutta. MEXICO: Sr. Don Fernando Caraves, Apartado 1100, Mexico City.

One view of The Viscose Company's recent exhibition of rayon fabrics . . . Hotel Pennsylvania, New York City

NEXT YEAR'S FABRIC FASHIONS BLOSSOMED HERE...

THE EXHIBIT of The Viscose Company in September brought to a single bright focus many and varied forms of rayon. On display were rich and interesting rayon satins, crepes, georgettes, brocades, moires, reps, poplins, knitted fabrics and other leaders. In modern weaves, new color effects, unusual combinations. . . . Visitors from the great textile houses were impressed by the variety and beauty of this sparkling display. They saw here the fashion fabrics of today—and working material for tomorrow's features. In suggesting new constructions and color effects to the factors that will make them in volume, this exhibit opens and advances the third decade of rayon manufacture. . . . Today rayon fabrics hold a position of first importance—on their merits, as materials of distinction and utility. Fine rayon yarns are offering special properties that bring new forms of beauty in almost every class of goods and garments. . . . More than half the rayon-content fabrics made in this country use CROWN Brand Rayon Yarns. There is a type and size specialized to every purpose. Each is the measure of merit in its class—uniform, even-dyeing, easily worked, permanent in color and finish, sterling in service. . . . The Viscose Company pioneered the American manufacture of rayon and has steadily led its advance—by a margin of millions of pounds every year. The recent exhibit was arranged in the interests of rayon—and as a service to the textile industry. Those who missed the show cannot miss its meaning. They may share its practical benefits at any time by private conferences with specialists of this company. . . . So begins a new era of fabric fashion. . . . The Viscose Company, 171 Madison Avenue, New York City.

The 1928 distribution of Crown Brand Rayon Yarns by uses

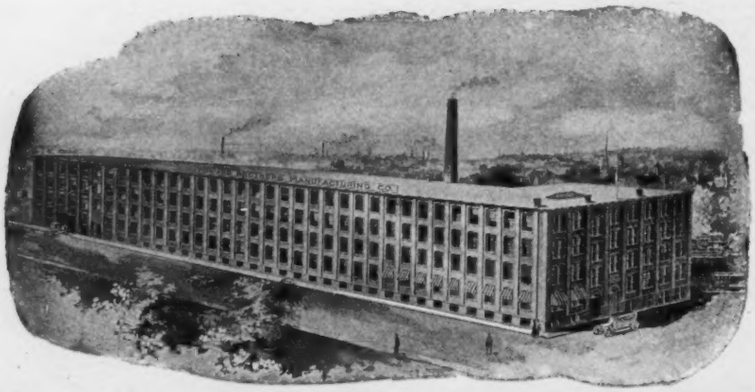
(FIGURES ARE POUNDS)

Underwear	17,820,000	Cotton Goods	10,800,000	Braids, Elastics, etc.	3,240,000
Hosiery	9,720,000	Silk Goods	7,020,000	Miscellaneous	2,700,000
Other Knit Goods	2,160,000	Wool Goods	540,000		

Estimated output for 1929—66,000,000 pounds

It is significant that increasing numbers of manufacturers are so proud of results obtained with Crown Brand Rayon Yarns that they are using this crown on their own labels to identify their products. We restrict its use to high-type textiles and well-styled quality merchandise. It is assurance of lasting merit.

MADE OF CROWN BRAND Rayon Yarns



LEADERSHIP

consistently proved in practical service---

There is nothing but service that can sustain leadership. Sooner or later the difference between promise and performance is made evident by experience.

Howard leadership in the card clothing industry rests entirely and squarely upon service to the user. Sixty-three years ago the first Howard Card Clothing was built because the textile manufacturer needed and wanted a better card clothing to produce his sliver.

Today Howard's SIZEMORE Labor Saving Straight Tooth CYLINDER FILLETS bring still greater efficiency and economy to the industry in the form of time and labor savings, better sliver and less wastage.

Howard still maintains their reputation for bringing to their clientele the best in improvements—and brings them as pioneer products . . . . ahead of the times.

MADE IN U.S.A.

HOWARD BROS. MFG. CO.

HOME OFFICE AND FACTORY: WORCESTER, MASS.
BRANCHES: PHILADELPHIA AND ATLANTA

TRADE MARK
TUFFER
REG. U.S. PAT. OFF.

1866 CARD CLOTHING *1929*

Sixty-Three Years of Service

Howard Products:

CARD CLOTHING
NAPPER CLOTHING
WIRE HEDDLES
CYLINDER FILLETS
DOFFER FILLETS
HAND STRIPPING CARDS
STRIPPER FILLETS
BURNISHER FILLETS
EMERY FILLETS
STRICKLES

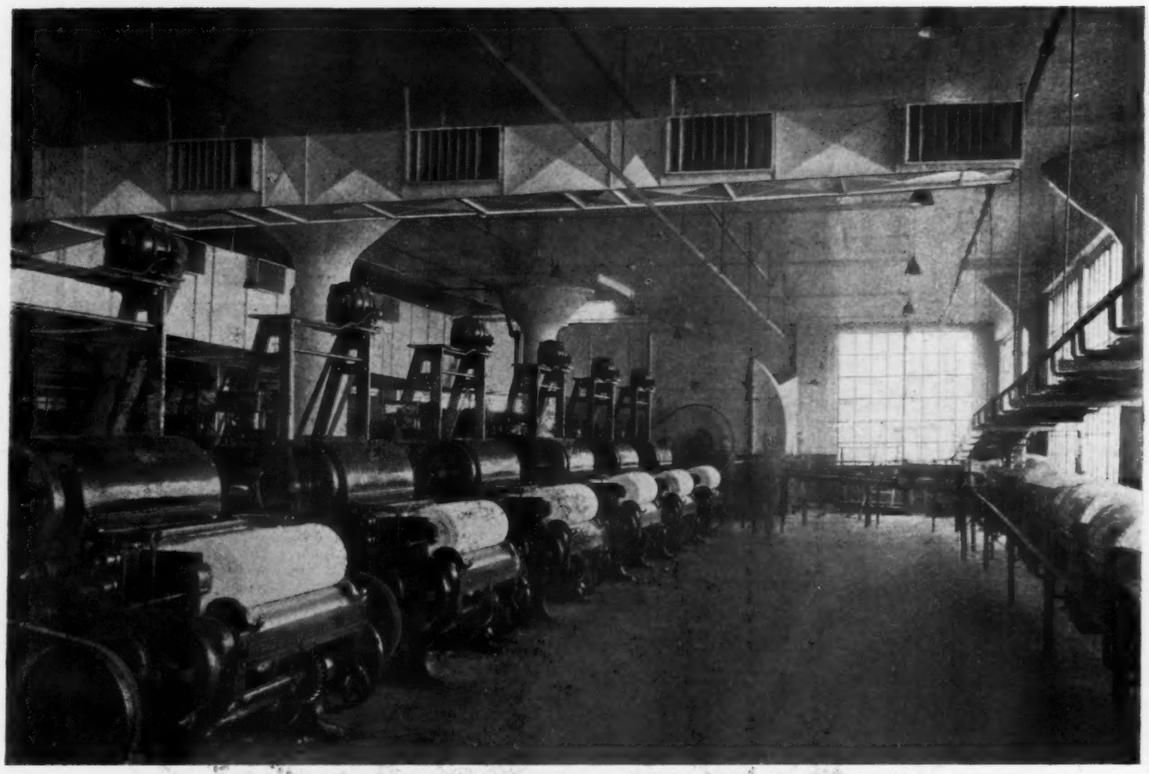
TOP FLATS RECOVERED

Complete equipment for recovering top flats and Lickerins has been established at our Branch Factory, 215 Forsyth St., S. W., Atlanta, Ga. Prompt service is assured

Extra sets of flats can be loaned to mills. A complete stock of Howard products are also carried at this plant ready for quick delivery.

Our Representatives:

are thoroughly competent to talk over Card Clothing matters and are at your call at all times.



The Carrier Conditioned Picker Room, Jackson Mills, Nashua, N. H.

Famous Indian Head Cloth Produced in Manufactured Weather

FOR years the Jackson Mills of the Nashua Manufacturing Company have produced their famous Indian Head Cloth in an atmosphere of ***Manufactured Weather*** . . . as provided through the Carrier Central Station for Air Conditioning.

. Here is another manufacturer who has long since stopped worrying about weather conditions outside . . . or in his plant . . . who is equipped to ***make his own weather*** and thus guard against broken ends . . . loss of regain . . . static . . . non-uniform tension on bands . . . and the numerous other troubles known to many textile manufacturers.

Manufactured Weather in the Jackson Mills, as well as in many of the world's largest and best known textile mills and rayon plants, assures that positive and automatic control of temperature, humidity, air movement and air purity for every operation, every department, so highly essential to the efficient operation of the mill.

The Carrier Central Station System for Air Conditioning, which for years has been recognized as the standard in textile mills and rayon plants, is backed by the skill and experience of a highly trained organization of more than twenty years' standing. A visit from one of our textile engineers for the purpose of discussing with you your particular problem, will place you under no obligation.

Write for literature and ask for a visit from one of our specialists

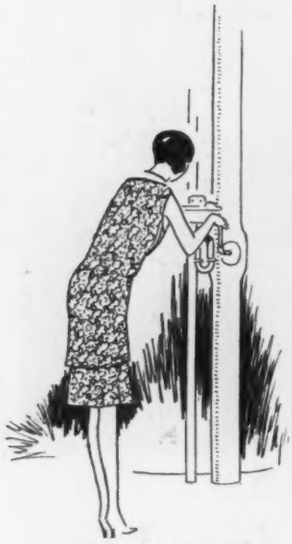
Carrier Engineering Corporation

Offices and Laboratories

NEWARK, NEW JERSEY

New York Philadelphia Boston Chicago Cleveland Detroit Washington Kansas City Dallas Los Angeles

The "Old Oaken Bucket" has no place in your plant



Operatives in your mill need cool, clean drinking water

OPERATIVES need, and appreciate, a plentiful supply of good clean water, properly cooled. They are better satisfied, healthier, and more efficient. This is one reason why so many mills use the circulating refrigerated drinking water system. The old, unsanitary "bucket and dipper" or ice water tank just aren't good enough and cost too much.

The modern system, insulated with Armstrong's Cork Covering, affords an easily accessible supply of good water constantly maintained at the right temperature, 45° to 50° F., and does it at a cost that is actually less than for any other satisfactory method of distribution. Surveys in mills where this system is used show an operating saving of from 30% to 40% over tanks or city water distribution, aside from the fact that water supplied is more healthful, palatable, and satisfying.

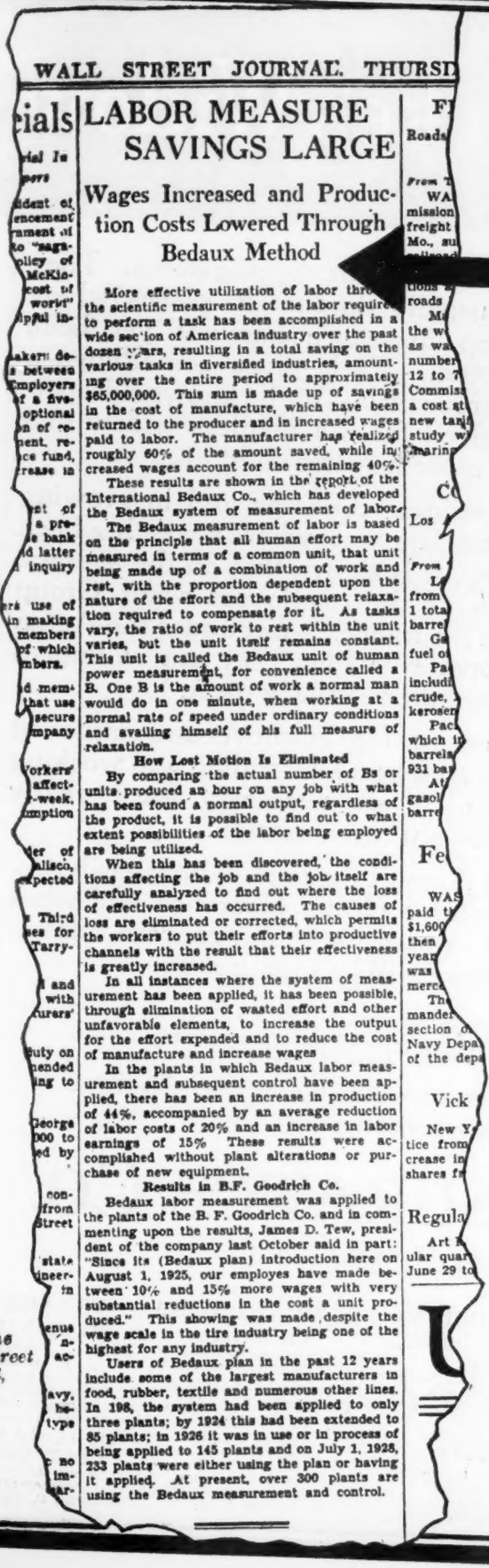
This low cost of operation is the result of efficient insulation. Armstrong's Cork Covering keeps the "line loss" so small that a very little refrigeration holds the temperature variation within a few degrees throughout the system. Furthermore, there is practically no depreciation to charge off on insulation. Armstrong's Cork Covering lasts as long as the lines with almost negligible expense for maintenance and repairs.

You will be interested in comparing the costs of operating different systems. Reports are available from nine prominent mills and will be sent on request. For details and complete information, address Armstrong Cork & Insulation Company, 906 Concord St., Lancaster, Pennsylvania.

Write for this informative book, "Refrigerated Drinking Water," sent free on request.

Armstrong's Cork Covering

Moistureproof Insulation for Cold Lines



WALL STREET JOURNAL. THURSD

ials

LABOR MEASURE SAVINGS LARGE

Wages Increased and Production Costs Lowered Through Bedaux Method

More effective utilization of labor thro the scientific measurement of the labor require to perform a task has been accomplished in a wide sec'ion of Americaa industry over the past dozen years, resulting in a total saving on the various tasks in diversified industries, amounting over the entire period to approximately $65,000,000. This sum is made up of savings in the cost of manufacture, which have been returned to the producer and in increased wages paid to labor. The manufacturer has realized roughly 60% of the amount saved, while increased wages account for the remaining 40%.

These results are shown in the report of the International Bedaux Co., which has developed the Bedaux system of measurement of labor.

The Bedaux measurement of labor is based on the principle that all human effort may be measured in terms of a common unit, that unit being made up of a combination of work and rest, with the proportion dependent upon the nature of the effort and the subsequent relaxation required to compensate for it. As tasks vary, the ratio of work to rest within the unit varies, but the unit itself remains constant. This unit is called the Bedaux unit of human power measurement, for convenience called a B. One B is the amount of work a normal man would do in one minute, when working at a normal rate of speed under ordinary conditions and availing himself of his full measure of relaxation.

How Lost Motion Is Eliminated

By comparing the actual number of Bs or units produced an hour on any job with what has been found a normal output, regardless of the product, it is possible to find out to what extent possibilities of the labor being employed are being utilized.

When this has been discovered, the conditions affecting the job and the job itself are carefully analyzed to find out where the loss of effectiveness has occurred. The causes of loss are eliminated or corrected, which permits the workers to put their efforts into productive channels with the result that their effectiveness is greatly increased.

In all instances where the system of measurement has been applied, it has been possible, through elimination of wasted effort and other unfavorable elements, to increase the output for the effort expended and to reduce the cost of manufacture and increase wages

In the plants in which Bedaux labor measurement and subsequent control have been applied, there has been an increase in production of 44%, accompanied by an average reduction of labor costs of 20% and an increase in labor earnings of 15% These results were accomplished without plant alterations or purchase of new equipment.

Results in B.F. Goodrich Co.

Bedaux labor measurement was applied to the plants of the B. F. Goodrich Co. and in commenting upon the results, James D. Tew, president of the company last October said in part: "Since its (Bedaux plan) introduction here on August 1, 1925, our employes have made between 10% and 15% more wages with very substantial reductions in the cost a unit produced." This showing was made despite the wage scale in the tire industry being one of the highest for any industry.

Users of Bedaux plan in the past 12 years include some of the largest manufacturers in food, rubber, textile and numerous other lines. In 198, the system had been applied to only three plants; by 1924 this had been extended to 85 plants; in 1926 it was in use or in process of being applied to 145 plants and on July 1, 1928, 233 plants were either using the plan or having it applied. At present, over 300 plants are using the Bedaux measurement and control.

From the Wall Street Journal, June 6, 1929

Wages Increased and Production Costs Lowered *through* BEDAUX METHOD

The Bedaux Principle of human power measurement lowers production costs and increases wages by dealing with the human element alone. It measures labor accurately. It determines and then eliminates or corrects the causes of wasted energy. It directs unutilized effort into productive channels — puts the right worker on the right job. It assures fair pay for fair work and by putting a premium on increased effort encourages each worker to do his best.

The results attained in increased production, higher wages and greater profits are strongly reflected in the happier, more prosperous conditions prevailing in plants in which the Bedaux Principle has been applied.

Further details, showing just how the Bedaux Principle may be applied to a particular plant, will be furnished gladly on request.

ESTABLISHED 1916 BEDAUX B REG. U.S. PAT. OFF.

THE CHAS. E. BEDAUX COMPANY

OF NEW YORK, INC.

DOUGLAS S. KEOGH, *President*, 271 Madison Ave., New York City
H. B. CRAFT, *Vice-President in charge of Southern Operations*, 30 Camden Road, Atlanta, Ga.

"It's for Joe Burke's Widow"

THE boys are digging down. They usually do that in places where Group Insurance has not yet been adopted. Each gives something—a generous little—for he knows a desperate need faces a helpless widow and still more helpless children.

In business concerns and in growing industrial plants where a vote has been taken, it is shown that on the average 95% of the employees want Group Life Insurance. And under the Aetna Cooperative Plan they are willing to contribute regularly for it.

Then, it brings employer and employed into closer understanding and working harmony—so necessary for a really successful organization.

Let Aetna Life explain how easily Co-operative Group Insurance will work out in your particular concern. Information will be gladly sent.

AETNA

SPECIALIZATION IN THE TEXTILE FIELD

Aetna has Group Insurance representatives from home office in each state. Ninety per cent of the textile group business in these states is carried by Aetna.

ÆTNA LIFE INSURANCE CO.

HARTFORD, CONN.

ALABAMA
EMPIRE BLDG., BIRMINGHAM
Wm. C. Reid, Gen. Agent.
Home Office Group Representatives:
H. E. Watlington, Jr.
R. Y. Thorpe

GEORGIA
GRANT BLDG., ATLANTA
S. M. Carson, Gen. Agent.
Home Office Group Representatives:
B. E. Shields,
Geo. G. Walsh

NORTH CAROLINA
CITIZENS BK. BLDG., RALEIGH
W. F. Upshaw, Gen. Agent.
Home Office Group Representative:
J. H. Eason
WILDER BLDG., CHARLOTTE
Home Office Group Representatives:
Paul S. Burt,
F. H. Shuler

SOUTH CAROLINA
CHESTER
Life and Group Departments:
C. C. Edwards, Gen. Agent.
NATIONAL LOAN & EXCHANGE BLDG., COLUMBIA
Special Group Representative:
D. C. Heyward
Home Office Group Representative:
E. M. Hines, Jr.

TENNESSEE
834 STAHLMAN BLDG., NASHVILLE
H. B. Alexander, Gen. Agent.
Home Office Group Representative:
M. D. Thomasson
315 JAMES BLDG., CHATTANOOGA
Home Office Group Representative:
Charles C. Carson, Jr.

Textile Banking Company

Fifty Union Square New York

FACTORING as applied to the textile manufacturing industry in New York is a means adopted by manufacturers to distribute their production on a basis equivalent to selling for cash, without credit risk, while at the same time granting to the purchaser of the product the usual terms of sale customary in the trade.

The Textile Banking Company in providing factoring service for manufacturers, eliminates the necessity on the part of the manufacturer of maintaining Credit and Collection Departments, assumes credit risks, and provides a constant flow of funds into the manufacturer's treasury as shipments covering sales go forward.

Passing upon credits and providing funds for the operation of a manufacturing plant are strictly commercial banking functions and it is decidedly to the advantage of the manufacturer to entirely separate from each other the functions of selling and banking.

The Textile Banking Company will be pleased to discuss the subject in detail with any manufacturer interested and firmly believes that forceful and efficient selling, plus a liberal credit checking service, and ample financial backing, will go far towards the successful operation of any mill.

Write for Booklet.

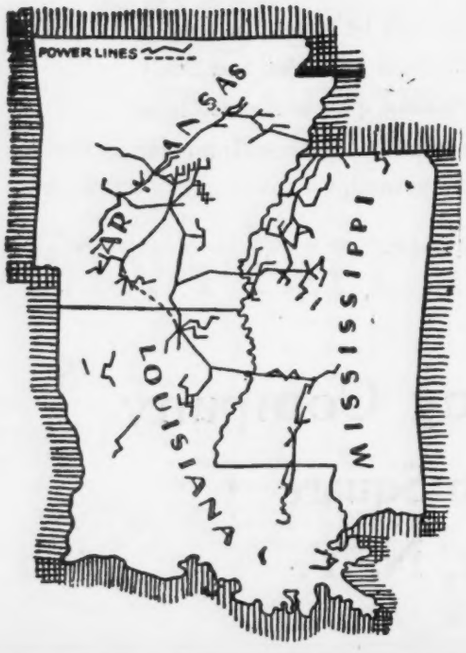
Textile Banking Company

Fifty Union Square

New York, N. Y.

PROFITS...

Profit sheets of mills located in the Mid-South Area PROVE this territory's advantages



AGAIN in 1929 textile and other mills located in the progressive industrial confines of the Mid-South Area are proving conclusively their greater earning ability over similar mills in Eastern and Northern territory.

Manufacturers who have not yet investigated the many advantages offered by the Mid-South Area are ignoring great potential profits.

Information...

Valuable information regarding advantageous labor conditions, tax exemption for textile industries and other things you should know about the Mid-South Area will be promptly supplied by: Arkansas Power & Light Co., Pine Bluff, Ark.; Mississippi Power & Light Co., Jackson, Miss., or Louisiana Power & Light Co., Algiers, La.

WHEN THE WATER HOLE DRIES

BREAK CAMP!

THE textile mill machinery industry is trying to carry water to the old camp-site, instead of following the trail to the new water hole.

The textile industry has moved South, leaving just one unit behind. And that happens to be a unit whose heavy merchandise costs most to move that thousand miles between the old center and the new. It happens, too, to be an industry that can suffer quickly when the resentment of its customers is roused.

Inevitably the machinery industry must follow the mills South. When that time comes, the shrewdest will cluster about Atlanta because of the outstanding advantages there. And the first to move will be the busy plants—with the others fighting hard for the crumbs.

Let the Atlanta Industrial Bureau give you the facts about the money you will save in manufacture, the better prices you can give your customers—and the highly improved service you can render them with a plant in the Atlanta Industrial Area. Your correspondence will be held in the strictest confidence. Write

INDUSTRIAL BUREAU, CHAMBER OF COMMERCE
979 Chamber of Commerce Building

ATLANTA
Industrial Headquarters of the South

Send for this Booklet
It contains the fundamental facts about Atlanta as a location for your Southern branch.

THE Right Paint FOR THE RIGHT JOB

Stewart Knows Paint

THERE is a right paint for every job. And it is only when this right paint is used that the combined advantages of low cost, durability and complete paint satisfaction are achieved.

This is Stewart's job—to specify the right paint for the right job. It is a science and an exacting science—one which is gained only after years of experience.

Stewart has this experience. Through "knowing how" Stewart can save you money on your painting. Can make your painting dollars go farther.

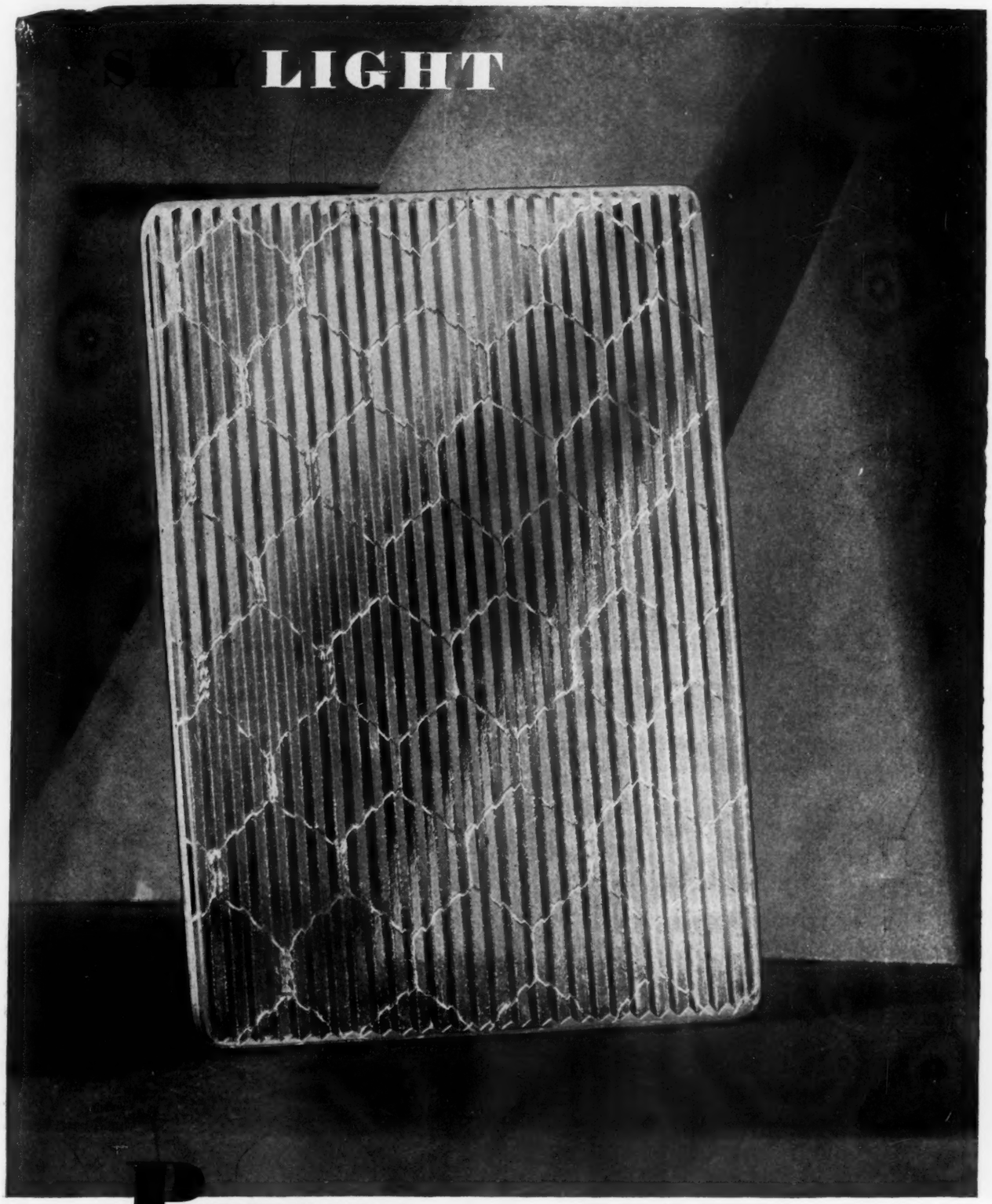
As "time to paint" comes each year more and more textile mills are standardizing on Stewart Paints. They know the results will be right and the cost will be right, because STEWART KNOWS PAINT.

Stewart makes a line of paints which are specifically adapted to the needs of the Textile Mill. In order to best serve the Southern Textile Mills Stewart has established a branch plant at Spartanburg, S. C. This "at your door" service will save you money and time.

Stewart Bros. Paint Co.

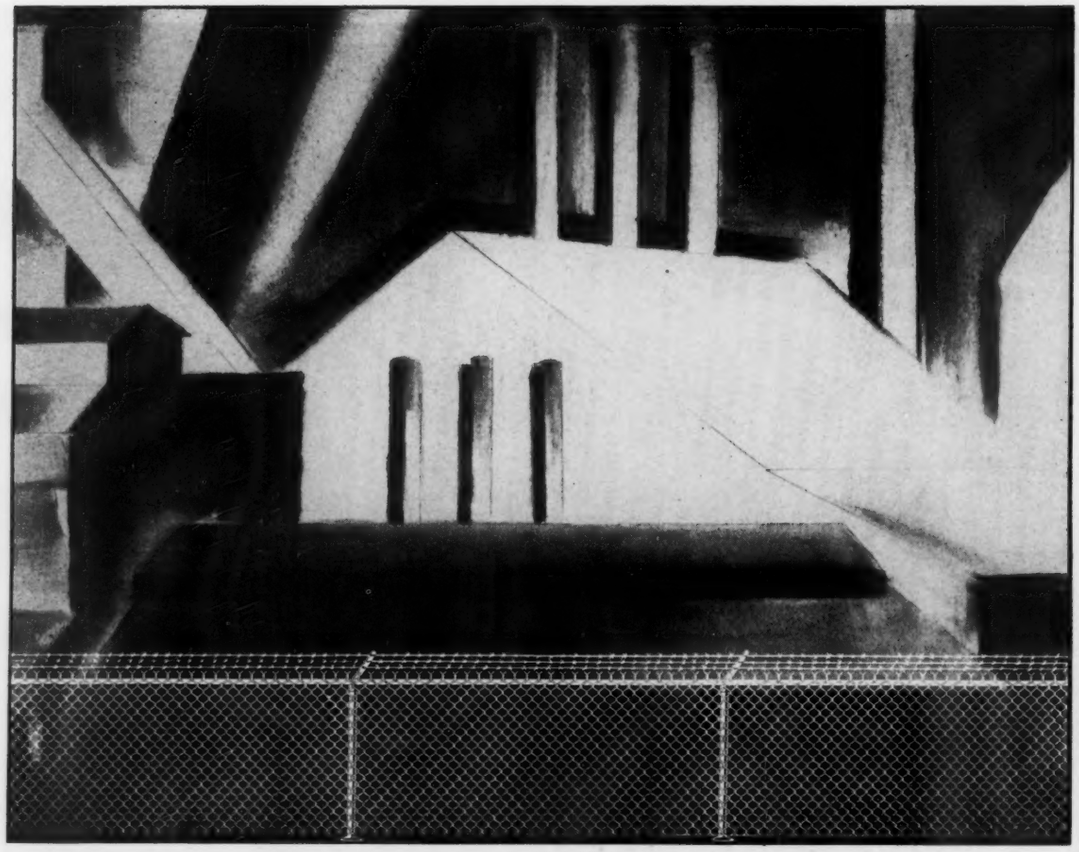
SPARTANBURG, S. C.

ALLIANCE, OHIO



PENTECOR . . . Best for skylights because it is a glass specifically made for the purpose . . . because it transmits light better . . . because it is easily installed and easily cleaned . . . best because it is the *most efficient.* Made wire or plain. Send for samples.

MISSISSIPPI WIRE GLASS CO. 220 FIFTH AVE. NEW YORK



Cyclone Chain Link Fence is furnished with H-Column Posts—proved by tests the strongest fence posts made. Set in reinforced concrete foundations.

IS ONE WEEK A YEAR ENOUGH TO ELIMINATE WASTE?

Reports show that many industrial concerns were benefited this year by the celebration of "Waste Week" sponsored by the American Society of Industrial Engineers for the elimination of waste. Why only once a year? Waste affects profit—and profit should be an all-year item.

Cyclone Fence helps eliminate waste the year round. It stops loss from thefts and vandalism. Converts idle outdoor space into valuable storage yards. Reduces loss from public liability suits. Fewer watchmen are required on the premises at night. Cyclone Fence itself is built for economy—made of copper-steel, heavily galvanized, it lasts many years. That means dependable protection at low cost per year. Cyclone Erection Service eliminates waste by insuring proper installation in shortest possible time. We take complete responsibility. Write for full information.

All Chain Link Fence is not Cyclone. This name plate identifies the genuine Cyclone Fence.

Cyclone Fence

REG. U. S. PAT. OFF.

© C. F. Co. 1929

Cyclone Fence Company

General Offices: WAUKEGAN, ILL. Branch Offices in All Principal Cities
Pacific Coast Division: Standard Fence Co., Oakland, Calif.

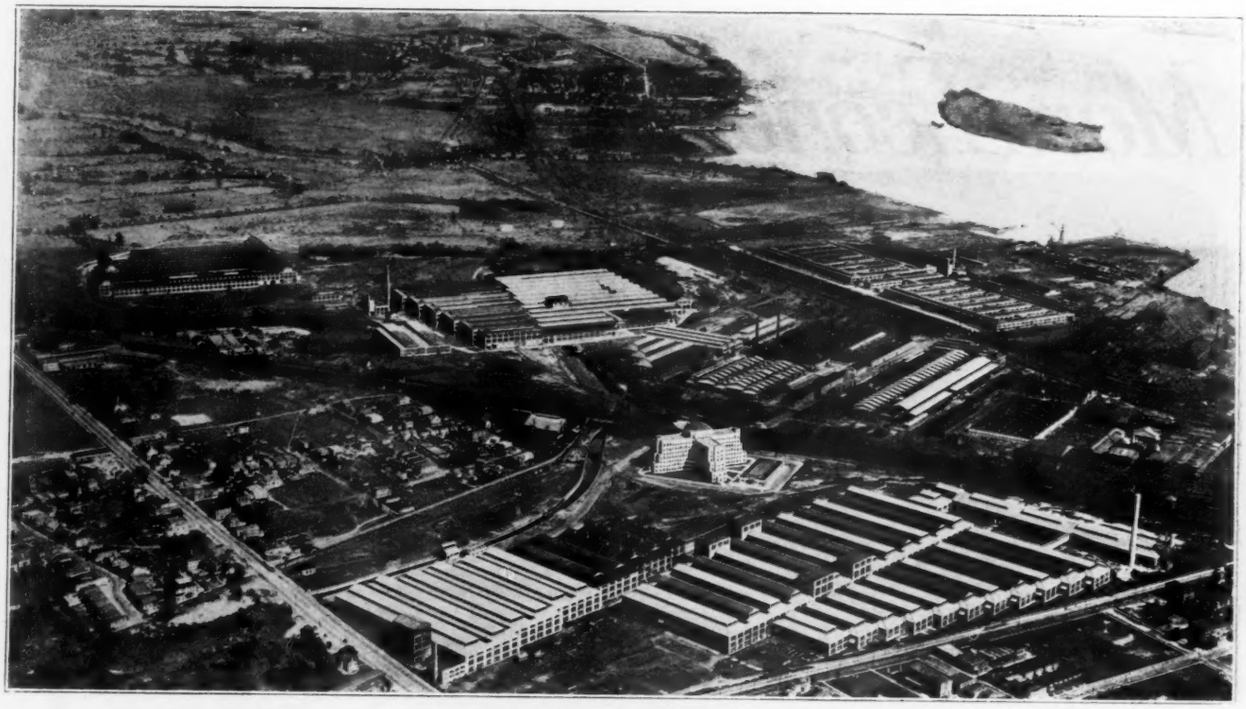
SUBSIDIARY OF
UNITED STATES STEEL CORPORATION

Quality Products — *Dependable Service*

PRINCIPAL SUBSIDIARY MANUFACTURING COMPANIES:

American Bridge Company	Carnegie Steel Company	Illinois Steel Company	The Lorain Steel Company
American Sheet and Tin Plate Company	Cyclone Fence Company	Minnesota Steel Company	Tennessee Coal, Iron & R. R. Company
American Steel and Wire Company	Federal Shipbuilding and Dry Dock Company	National Tube Company	Universal Portland Cement Company

Pacific Coast Distributors—United States Steel Products Company, San Francisco, Los Angeles, Portland, Seattle, Honolulu. *Export Distributors*—United States Steel Products Company, New York City



The Baldwin Plant at Eddystone

The Baldwin Locomotive Works

are Completely Equipped with

TRICO RENEWABLE FUSES

They're "Powder-Packed"

This gigantic institution chooses Trico Renewable Fuses for electrical protection. There are several good reasons why large enterprises like this select Trico.

The powder-packed renewal elements in Trico Fuses make them dependable, and they render the highly efficient service so much desired by particular electrical engineers.

Other important factors that round out the merits of this really outstanding renewable fuse are listed in the next column.

Money-Saving TRICO Factors

No Premature Blowings
No Unnecessary Shutdowns
No Oxidized Contacts
No Charred Casings
Copper-to-Copper Contacts
Reduced Watt Loss
Time Lag

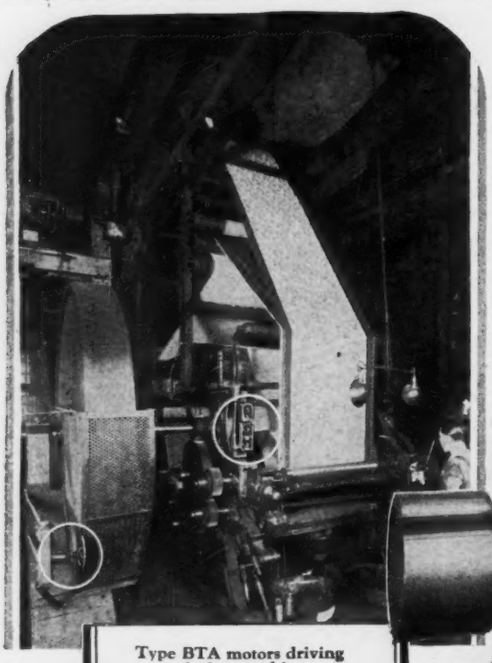
And they cost no more than other makes of renewable Fuses

Free Samples on Request

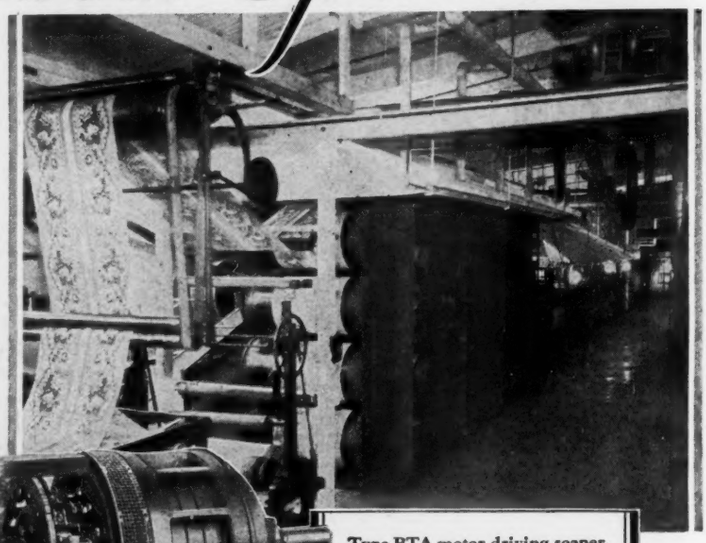
Approved by Underwriters

TRICO FUSE MFG. CO., 1003 McKinley Ave., Milwaukee, Wis.

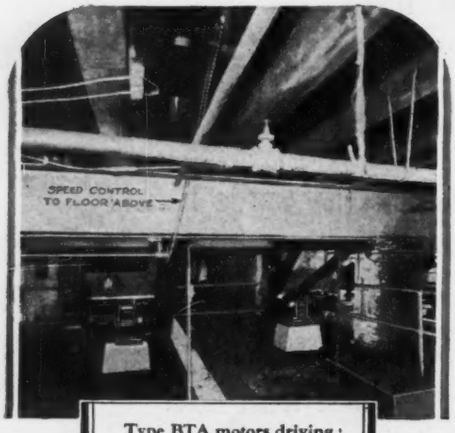
More Economical Operation



Type BTA motors driving printing machines



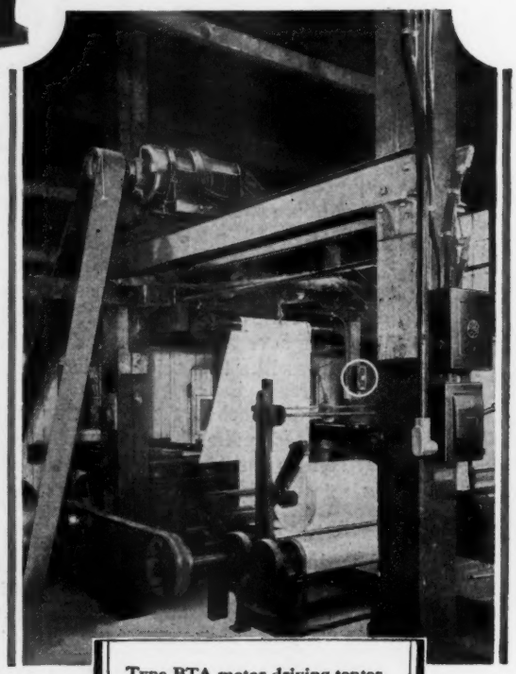
Type BTA motor driving soaper, dryer, folder, and winder



Type BTA motors driving cloth tenters

Type BTA motors have four clean-cut advantages for driving finishing-room machinery

1. Highest motor efficiency obtainable in a-c. adjustable-speed operation.
2. Infinite number of speed points over complete speed range.
3. Extreme simplicity of control. A push-button-operated, across-the-line starter permits starting, stopping, jogging, and creeping. And speed adjustment is obtainable either with a convenient hand wheel or push button.
4. Shunt characteristics assure stable load at all speeds.



Type BTA motor driving tenter, dryer, mangle, and ironer

Motorized Power
—fitted to every need

GENERAL

GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y.

for the Eddystone Mfg. Co.

IN 1926, the Eddystone Manufacturing Company, Eddystone, Pa.—bleachers, dyers, printers, and finishers—operated with steam engines and miscellaneous direct-current motors.

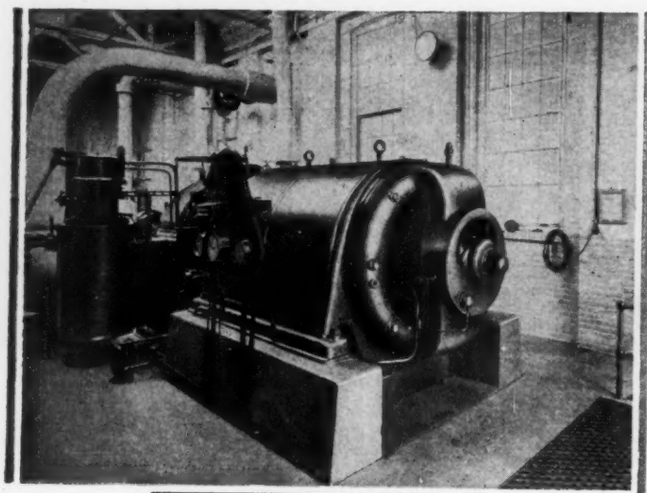
In the interest of economy and modernization, this company decided to change over to a-c. operation. In accordance with plans developed by Mr. S. M. Green, consulting engineer of Springfield, Mass., and G-E textile specialists, the following changes were made.

1. Installed a 1500-kw. G-E turbine—hence plenty of process steam made available.
2. Installed a G-E switchboard and complete G-E distribution equipment.
3. Installed individual G-E squirrel-cage motor drive on practically all constant-speed machinery.
4. Installed 30 G-E type BTA adjustable-speed, a-c. motors on the variable-speed finishing machinery.
5. Installed modern G-E controllers throughout to direct, with safety and flexibility, the 3700 horsepower in motors.

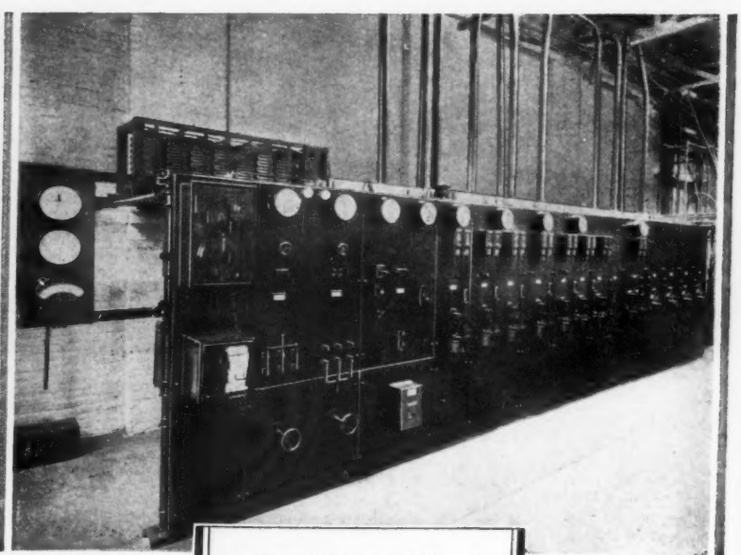
As a result, this finishing plant is now one of the most successful in the country. Mill operation is now on a more economical basis. Specially gratifying to the management are the exceptional results obtained from the Type BTA drive of the printing machines.

This is a typical example of G-E Motorized Power as applied to the textile industry. If you are contemplating a new mill, a change-over, or additional equipment, you will find the nearest G-E office of invaluable service.

JOIN US IN THE GENERAL ELECTRIC HOUR, BROADCAST EVERY SATURDAY AT 9 P.M., E.S.T. ON A NATION-WIDE N.B.C. NETWORK



General Electric turbine

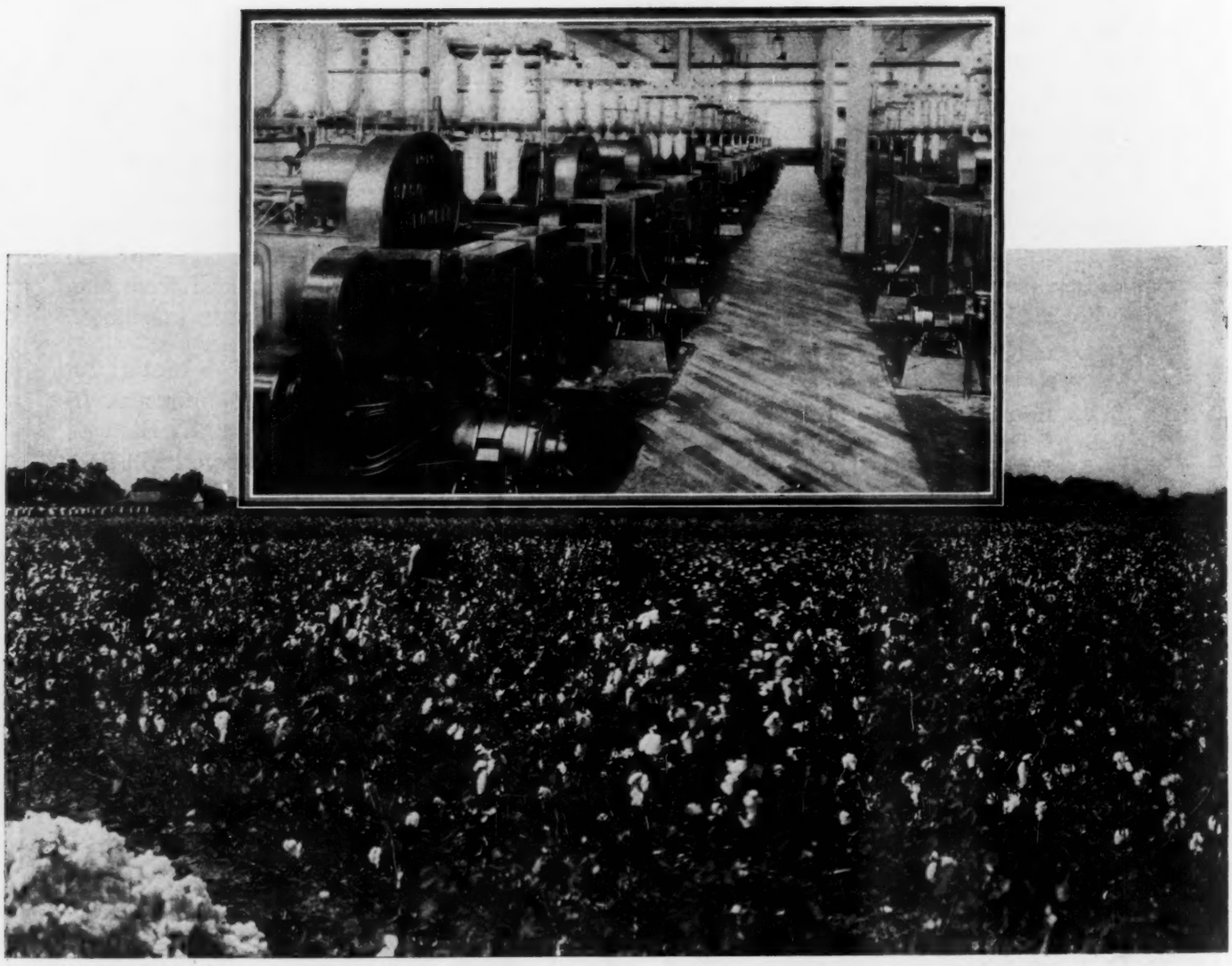


General Electric switchboard

200-274

ELECTRIC

SALES OFFICES IN PRINCIPAL CITIES



T 30853

Balance

TIGHT-ROPE walkers tread almost a hairline path. Every step is accurate to the nth degree. What a sense of balance!

Modern textile mills, too, are constructed and operated with a keen sense of balance. From the opening room to the shipping department, they are so constructed and equipped that production will be balanced—picking, carding, spinning and weaving rooms so designed and operated that the production of each will balance as to the other. Balanced equipment and production is the trend of the day.

Just as it takes an innate sense, coupled with years of experience, for a tight-rope walker to perfect his act—just as years of specialized experience have enabled textile mills to perfect a structurally balanced mill and production organization—so has time and experience brought to Westinghouse the fact that dynamic, electrical, and physical balance is essential in the manufacture of electrical equipment.

Balance! Something which years of experience have enabled Westinghouse engineers to make a characteristic of Westinghouse equipment. Something which years of specialized experience have enabled Westinghouse engineers to apply to textile production. Balance! So essential to profitable operation.

Balance! Can there be any better definition of that unseen something which makes Westinghouse electrical equipment a leader in its field?

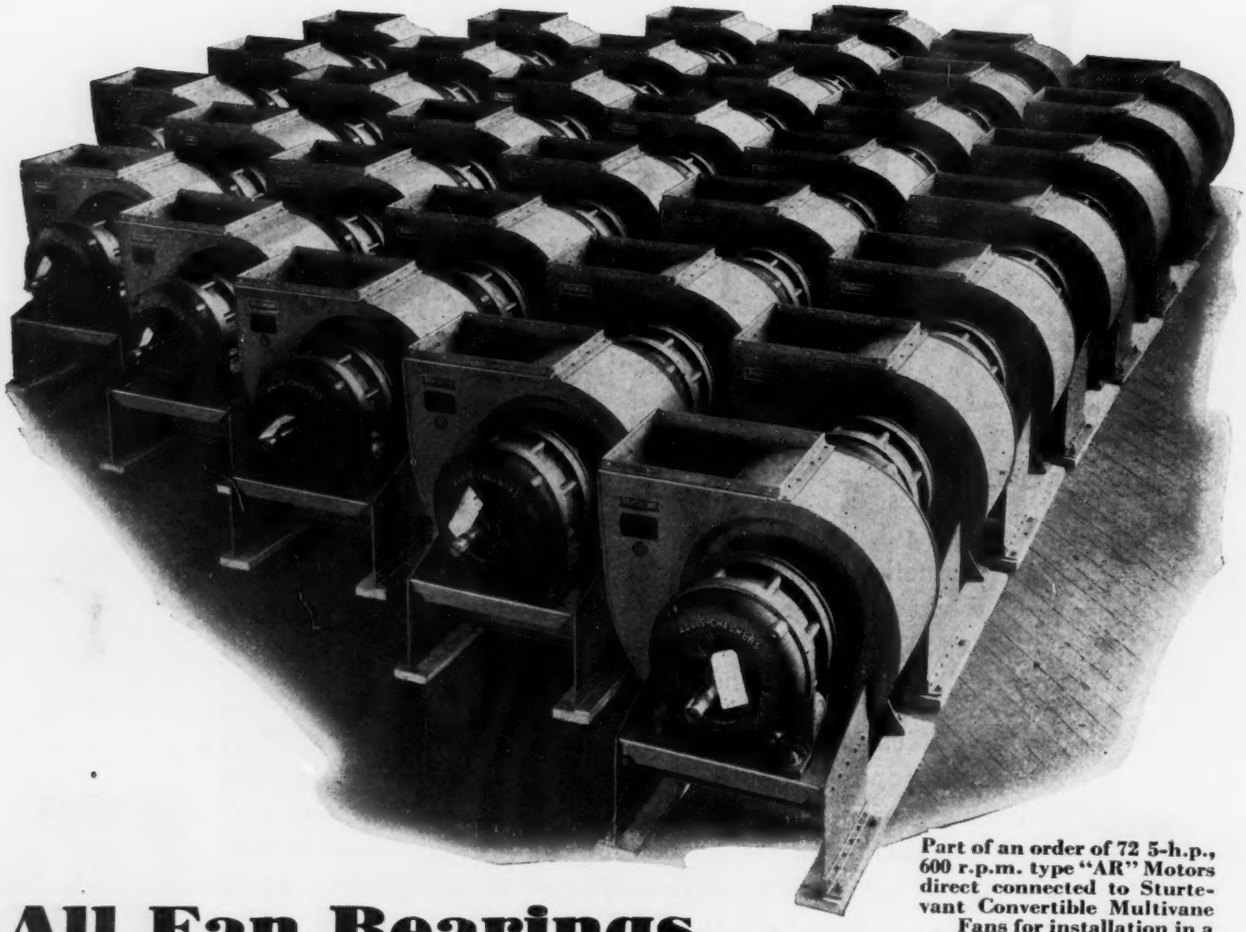
WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY
EAST PITTSBURGH PENNSYLVANIA
SALES OFFICES AND SERVICE SHOPS IN ALL PRINCIPAL CITIES

Westinghouse Equipment for the Textile Industry includes:

Condensers
Controllers
Gearing
Insulators and Insulation
Lamps and Lighting Fixtures
Lightning Arresters
Line Material
Motors
Safety Switches
Speed Reducers
Stokers
Switchboards
Switchboard Equipment
Transformers
Turbines

Westinghouse

T 30853-A



Part of an order of 72 5-h.p., 600 r.p.m. type "AR" Motors direct connected to Sturtevant Convertible Multivane Fans for installation in a large rayon plant.

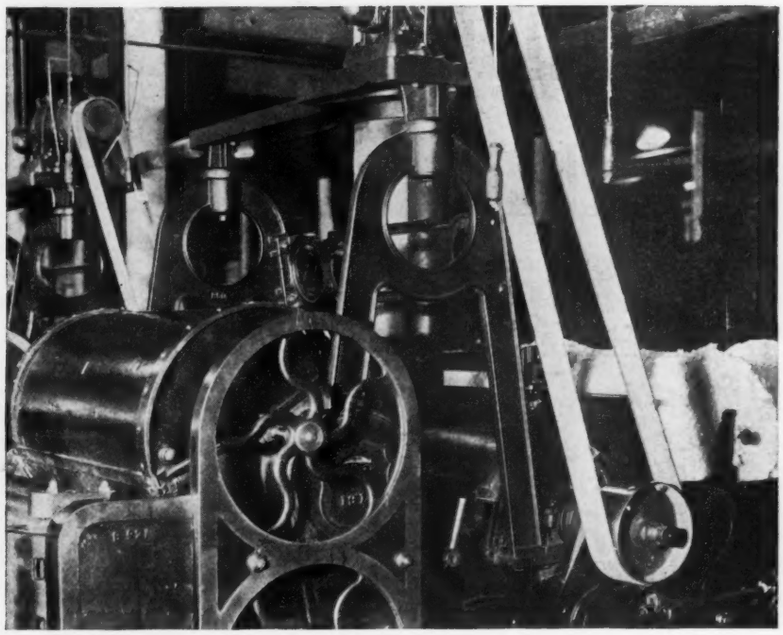
All Fan Bearings are Eliminated in this Unique Motor Installation

IT WAS possible to entirely eliminate the fan bearings in building these convertible multivane fan units for the air conditioning system of a large rayon plant. Because of the rugged construction, high mechanical efficiency and short shafts of the Allis-Chalmers motors, the rotating elements of the fans were mounted directly on the motor shaft extensions. This resulted in a more silent and efficient as well as a more compact unit. From the opposite ends of the motors, Texrope Drives operate other parts of the equipment.

The sturdy mechanical construction of Allis-Chalmers motors is emphasized in the frames, shafts and bearings. Electric steel frames and spiders give maximum strength with minimum weight. Compactness in design permits shorter and more rigid shafts. These features, together with the greater load area and thrust capacity of the bearings, make these motors peculiarly adaptable to direct drives.

ALLIS-CHALMERS MANUFACTURING COMPANY, MILWAUKEE, WIS.

ALLIS-CHALMERS MOTORS



Highflex belt operating a picker. These belts are used also on spinning frames and looms. One cotton mill reported—"We believe that the Goodrich Company has developed the best fabric belt for our use that there is on the market today and we are going to be able to use this belt from now on in a large way. The cost is only about 40 % to 50 % of that of leather."

Highflex Belting drives textile machinery at half the cost of leather belting

Remarkable flexibility developed by Goodrich principle of belt construction. How perfect contact on small pulleys is achieved.

* * *

THREE YEARS of gruelling service in the textile industries have proved the Goodrich Highflex Principle. Where uniform speed is to be maintained, where driving pulleys are small, there Highflex belting has proved its amazing flexibility and pulley grip. Highflex takes full advantage of the arc of contact.

The Highflex Principle does away with the folded edge of old-type belt construction: each ply in Highflex belting ends at the edge of the belt — there is no fold to prevent the free action of ply on ply. The result is a remarkable new smoothness and evenness of running that saves power.

You Can Prove the Highflex Princible this easy way

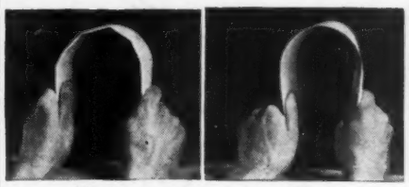
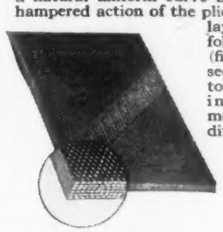


Fig. 1 Fig. 2

Bend a pad of paper or booklet with the fingers. When viewed from the edge (fig. 1) it assumes a natural uniform curve because of the unhampered action of the plies. Now, if several layers of paper are folded and then bent (fig. 2), you instantly see how the fold distorts the curve and impedes the free movement of the individual layers.



One of the important results of Highflex construction is freedom from bootlegging. In old-type folded-edge belts, air pockets are forced to travel lengthwise along the belt. Because Highflex belts are foldless, air pockets immediately escape to the edge of the belt.

Highflex belts have no seams to open up. They can be used with either side to the pulley. Fasteners do not pull out. Slippage on small pulleys is overcome. Temperature and humidity do not affect them. Highflex belting is furnished not only in individual rolls, but also in individual belts, built endless at the factory, without splices and weak spots.

* * *

We will gladly send additional information. Write to The B. F. Goodrich Rubber Company, Est. 1870, Akron, O. (In the West, Pacific Goodrich Rubber Co., Los Angeles, Cal.) or fill in the coupon below.

Goodrich

C-11

THE B. F. GOODRICH RUBBER CO.
Akron, Ohio

Gentlemen: Without obligation to me please send further information on Goodrich Highflex belting.

Name .....

Firm .....

Address .....

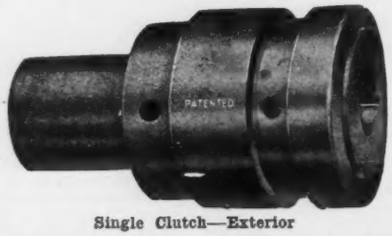
THE JOHNSON FRICTION CLUTCH

As Used In The

TEXTILE INDUSTRY

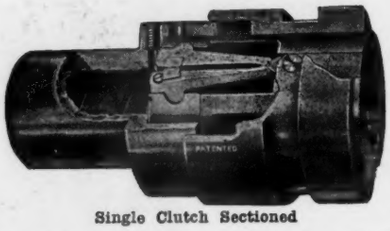
ON

—TENTERS —— DYE JIGS—
—SEWING MACHINES —— WARP SIZERS—



Single Clutch—Exterior

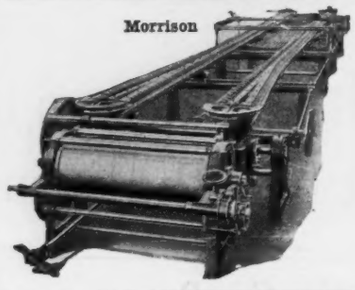
JOHNSONS
GIVE 15 TO 20 YEARS
SERVICE on TEXTILE MACHINERY



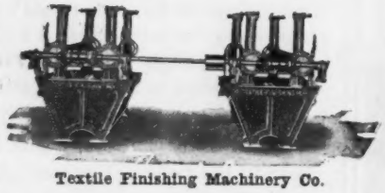
Single Clutch Sectioned

We supply the proper type of friction clutch on any sort of installation. Special models developed to meet conditions. Slow speed clutches carried in stock for immediate shipment. Made in nine sizes, to fit shafting from ¾ to 3 3/16 inch diameter.

Morrison

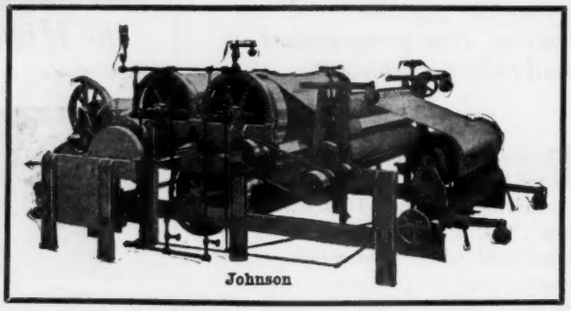


We sell not merely clutches, but *clutch service.* This means that for years and years you get the fullest measure of satisfactory service. We back our installations with more than twenty-five years' practical clutch-making experience.



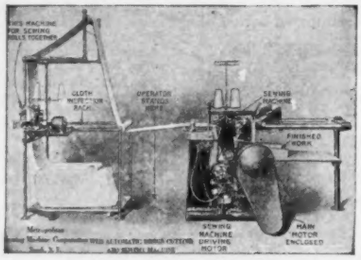
Textile Finishing Machinery Co.

use
JOHNSON CLUTCHES



Johnson

We specialize in dependable clutches. Twenty-five years' clutch- making experience, a store of information for you to draw upon. Expert preliminary survey of every installation gratis. Give us the facts, and competent engineers will solve your clutch problems.



Weis Sewing Machine

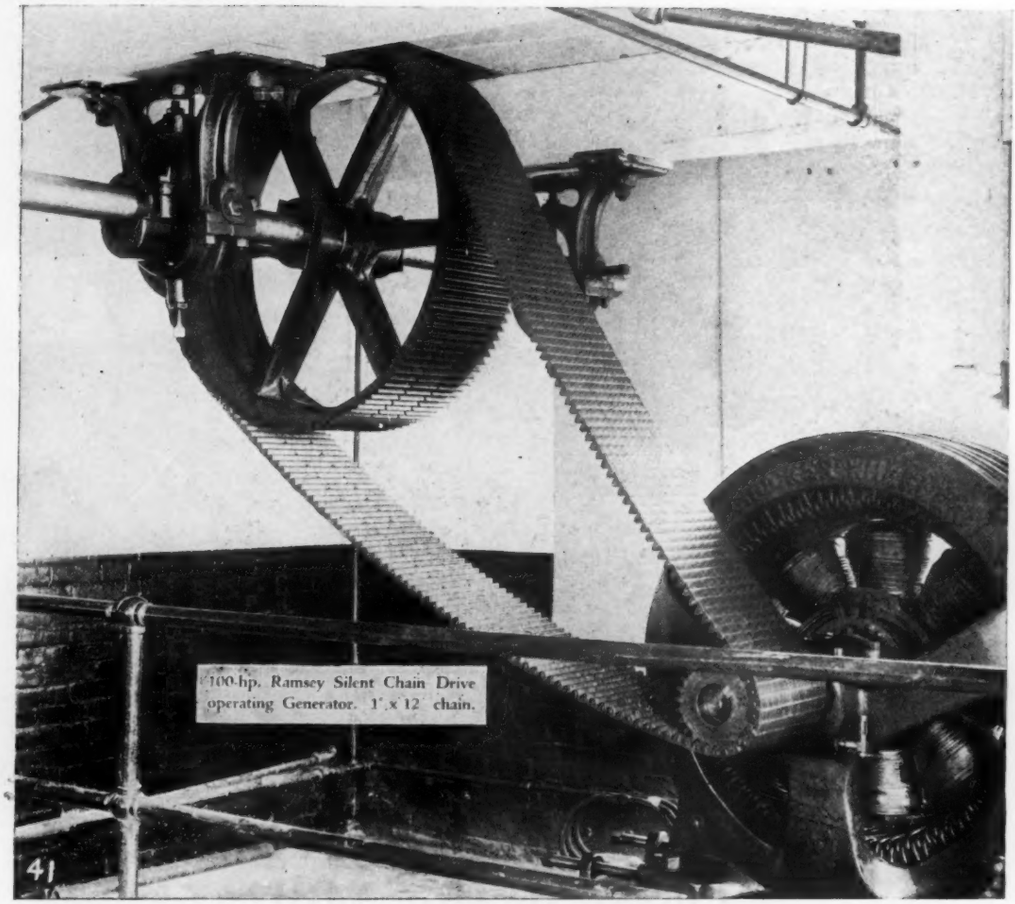
JOHNSON Clutches are used all over America and Europe on thousands of Textile Machines. Send us your clutch problems. Equip your Textile machines with JOHNSONS.

Single Clutch, Pulley Mounted

WRITE FOR CATALOG "G-11"

Double Clutch Exterior

THE CARLYLE JOHNSON MACHINE CO. MANCHESTER CONN



UNFAILING POWER TRANSMISSION

To be handicapped in the *PRODUCTION* end of their operations is a condition to be feared by Textile Plants; they have enough troubles without the addition of poor power transmission.

Many Textile Plants are improving their power transmission equipment by the installation of Ramsey Silent Chain Drives, one immediate advantage of which is reflected in a more dependable production schedule.

RAMSEY
SILENT CHAIN DRIVES

Textile mills buy Ramsey Silent Chain Drives because of their proven fine performance, the result, principally, of the use of the unique Ramsey Roller Bearing Joint (patented) which lends a quiet smoothness never before realized with silent chain drives.

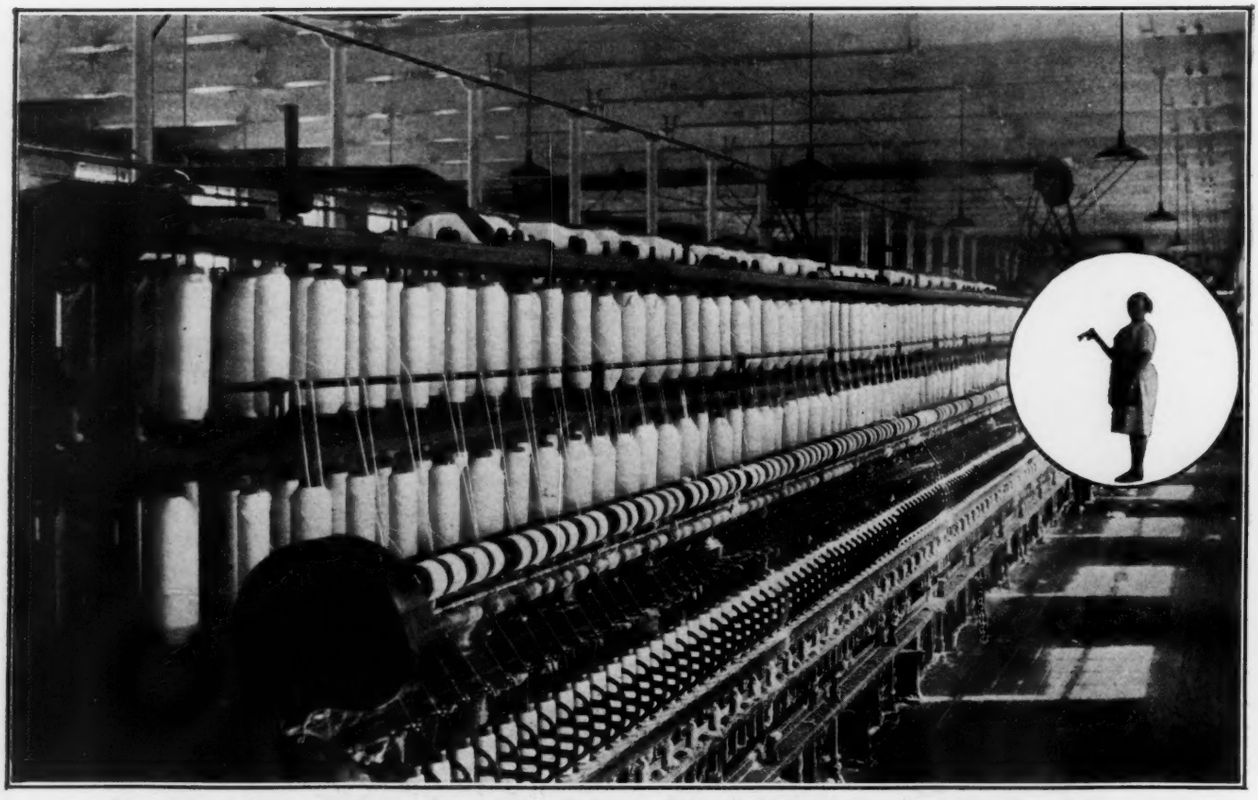
Our engineers (see list below) will design drives exactly suited to your particular requirements. Call on them; they are at your service, as is also our Atlanta warehouse. Write for literature.

RAMSEY CHAIN COMPANY, Inc.

1043 Broadway, - - - - Albany, N. Y.

Branch Offices and Agents

ATLANTA, GA., Ramsey Chain Co., Inc. (warehouse)
BALTIMORE, MD., L. A. Benson & Company
BIRMINGHAM, ALA., Young & Vann Supply Company
BOSTON, MASS., Ramsey Chain Co., Inc., and Union Gear & Machine Co.
CHICAGO, ILL., Ramsey Chain Co., Inc. (warehouse)
CLEVELAND, OHIO, Ramsey Chain Co., Inc. (warehouse)
COLUMBUS, OHIO, Osborne & Sexton Machinery Co.
DENVER, COLO., B. C. Horne Machinery Co.
DETROIT, MICH., Ramsey Chain Co., Inc., and Palmer-Bee Company
GASTONIA, N. C., Ferguson Gear Company
KANSAS CITY, MO., Morse Engineering Company
LOS ANGELES, CALIF., F. C. Millard Engineering Company
NEWARK, N. J., Ramsey Chain Co., Inc. (warehouse)
NEW HAVEN, CONN., Page, Steele & Flagg Company
NEW ORLEANS, LA., Standard Supply & Hardware Company
NEW YORK, N. Y., Ramsey Chain Co., Inc. (warehouse)
PHILADELPHIA, PA., Ramsey Chain Co., Inc., and Robert L. Latimer & Co.
PITTSBURGH, PA., Starr Equipment Company
ROCHESTER, N. Y., Erskine-Healey, Inc.
ST. LOUIS, MO., Morse Engineering Company
SALT LAKE CITY, UTAH, E. C. Horne Machinery Co.
SAN FRANCISCO, CALIF., Ramsey Chain Co., Inc. (warehouse), and Pacific Gear & Tool Works, Inc.
UTICA, N. Y., Langdon & Hughes Construction Company
CANADIAN FACTORY; Hamilton Gear & Machine Co., Toronto.



What is the Girl in the White Circle Doing in this Mill?

IF we hadn't turned the critical spotlight on this girl hand, the chances are you wouldn't notice her very much in the picture. And that's the reason why many mill owners are not conscious of the useless work that is being performed by such hands . . . because it has always been accepted as part of the job.

Well then, you may ask, "What's wrong with the picture." There's only one word . . . *obsolescence*. About fifty per cent of the job is useless because this hand is busy tying up ends that would, in a great measure, be materially reduced by SKF Roller Bearing Spindles.

But the benefits do not stop with less ends down. First, the hand could increase the scope of her work; Second, the finished product would be materially improved; Third, wastage would be reduced; Fourth, an even speed would be maintained assuring increased production.

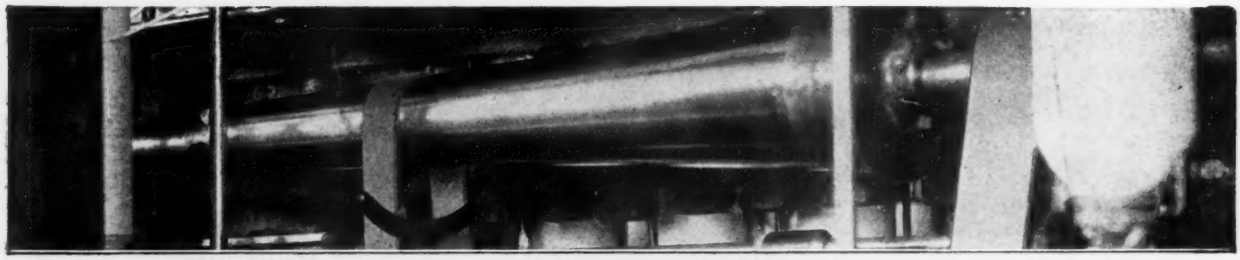
These are outstanding advantages of SKF Roller Bearing Spindles, the most important improvement for spinning frames in the twentieth century. They are not an experiment but have been proved by years of service. They are not endorsed by a few spinning frame manufacturers but by *all of them throughout the world*. If you are not using SKF now you are nevertheless paying for an improvement which is not in your mill.

It will pay you to investigate. The firm from whom you purchase your plain bearing spindles will give you a quotation or, if you prefer, an SKF engineer will gladly call with a sample spindle produced by the maker of your spinning equipment.

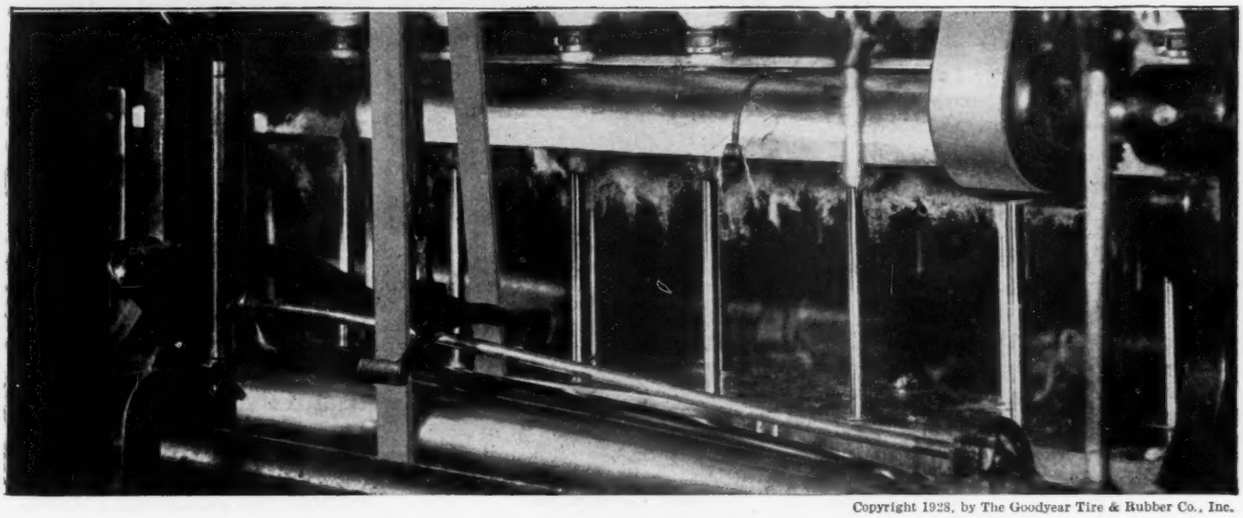
SKF INDUSTRIES, INC., 40 East 34th Street, New York, N. Y. 2403

SKF

Ball and Roller Bearings



BELTS THAT DO NOT STRETCH



Copyright 1928, by The Goodyear Tire & Rubber Co., Inc.

You get better service, longer wear, and the kind of performance that assists in the production of yarn free from knots, snarls and piecing, when you use Goodyear Cord Cone Belts on your slubbers, jack frames, intermediates and fine frame drives

---

Goodyear Cord Cone Belts do not break or stretch.

They are specially made to hold the cones and the pulleys in a flexible, slipless grip.

Their efficient, economical service is a result of correct design and special Goodyear construction.

Goodyear Cord Cone Belts are designed especially for the duty required of them, and built according to specifications determined by analysis of the textile industry.

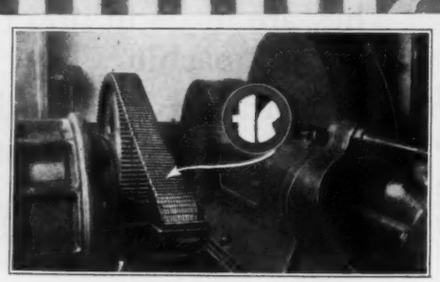
They are made in sizes to fit all standard machines.

For typical service records or for any other information about these belts, address Goodyear, Akron, Ohio, or Los Angeles, California.

The Greatest Name in Rubber

GOODYEAR

A Smooth Flow of Power With MORSE CHAIN DRIVES



MORSE SILENT CHAINS, driving from motor to 10 ton ammonia compressor, at Colgate & Co., Jersey City, New Jersey.

YOU don't have to start expensive machinery with a jerk that takes years of its useful life away, and you don't have to pay a high premium for power transmission upkeep. Morse Silent Chain Drives serve every line of industry, in small installations of one or two horsepower, and big ones of five thousand. They cut overhead costs, increase production, get the most work out of machines, and give a power flow of 98.6% efficiency throughout their long and useful lives.

Big industry approves Morse Silent Chain Drives, and outstanding engineers specify them for all sorts of power transmission jobs. You can have this money-making efficiency in *your* plant. Just write the Morse Chain Company for a complete data file on power transmission. A Morse engineer is waiting to serve you if you need him. Just write—there's no obligation.

MORSE CHAIN CO.
ITHACA NEW YORK
Branches in Principal Cities

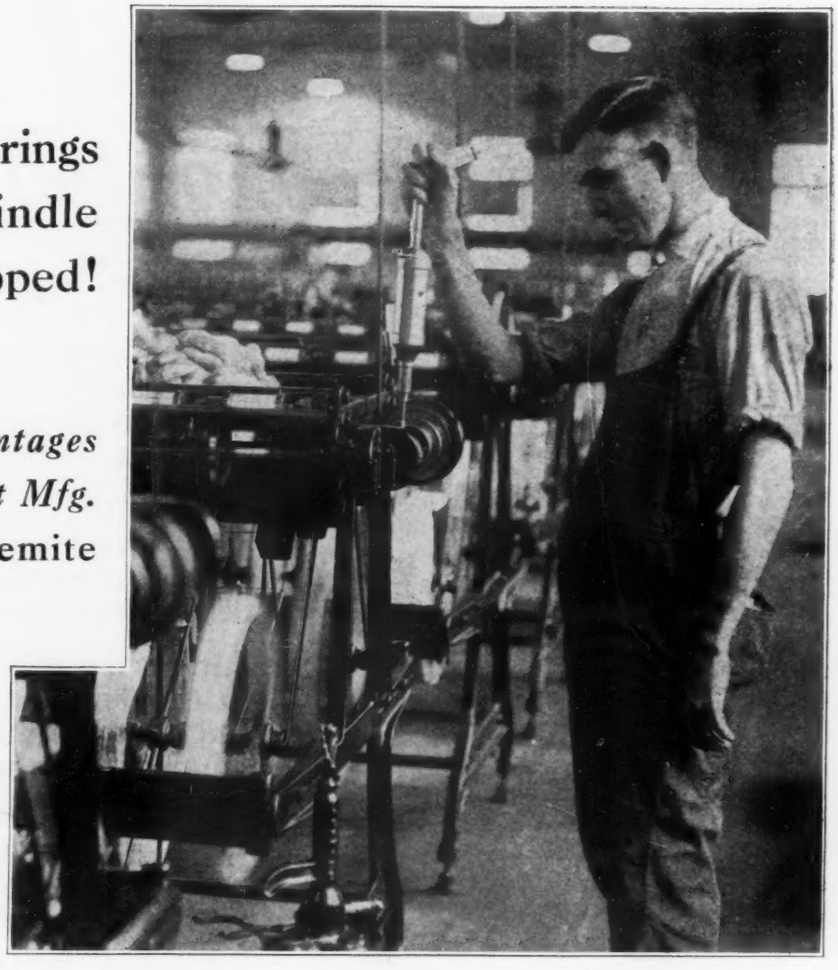
Be sure to see the Morse Chain Co. exhibit at the Power Show, New York City, Dec. 2nd. to 7th.

MORSE SILENT CHAIN DRIVES

Spoilage Cut 50%!

No Burned Out Bearings In 18 Months! Spindle Belt Slippage Stopped!

Just a few of the advantages gained by Read & Lovatt Mfg. Co. since installing* Alemite *Lubrication



THIS experience of Read & Lovatt Mfg. Co. of Weatherly, Pa., is typical of many of the country's leading textile manufacturers. Alemite High Pressure Lubrication, in a score of ways, is saving its cost many times over each year. In labor saving alone it more than pays its own way.

Alemite High Pressure Lubrication Systems prevent 75% of bearing troubles and consequent costly shutdowns. Save 50% and more in lubricating labor and lubricant. Lubrication is easy—so it is not neglected. Sure—so it is done right. With Alemite Systems every bearing is easy to reach for lubrication. Each receives a sufficient quantity of lubricant—yet there is no wasted lubricant to stain floors, to spoil the product being manufactured or handled.

Manufacturers of machinery know that proper lubrication means longer life, greater efficiency, freedom from repairs. So more than 600 leading manufacturers of machinery equip their product with Alemite.

But you do not need to wait for new machinery to secure the advantage of Alemite High Pressure Lubrication and Alemite Lubricants.

Alemite fittings are made to fit present oil holes and replace oil and grease cups. The installation requires only a few minutes.

And the cost is small—yet an Alemite fitting, costing only a few cents, may save a bearing which would cost many dollars to replace, in material, in labor and loss of productive time of the machine.

And with this system lubricant is handled from Barrel-to-Bearing without even exposing to air or wasting an ounce.

In every line of industry, from bakeries to textile mills, you will find Alemite Lubricants actually saving many times their original cost each year.

Learn how Alemite can be profitably applied to your present equipment. Learn how other manufacturers in your industry are effecting savings. An Alemite representative will be glad to give you a demonstration at your convenience—without obligation on your part. Write for complete information.

Alemite Corporation (Division of Stewart-Warner), 2686 North Crawford Avenue, Chicago, Ill., Canadian address: The Alemite Products Company of Canada, Ltd., Belleville, Ontario, Canada.

ALEMITE CORPORATION
(Division of Stewart-Warner)
2686 N. Crawford Avenue, Chicago, Illinois

Please send me complete information on Alemite.

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Address .....

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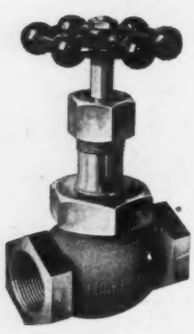
1048

A Mighty Force Controlled

Iron Body "Ferrenewo" Valve

Bronze "Renewo" Valve



Bronze Regrinding Valve

Bronze Double Disc Gate Valve

The complete Lunkenheimer line includes valves of bronze, iron and steel; gate, globe, angle, check, blow-off, non-return, pop safety and relief valves; lubricators, oil and grease cups, cocks, whistles, fittings, etc. Descriptive literature of any of these products will be sent upon request.

Millions of gallons of water—a necessity and a useful servant when held in check by the mighty dam—an element of destruction when uncontrolled.

So, too, the water and steam in your boilers develop a mighty force, indispensable to industry in providing the necessities for millions of humans.

But this force likewise must be controlled. In the pipe lines which transport power and heat to machinery and equipment, the valves are the dams which must hold tight against leakage.

If the valves leak, you are paying a heavy toll in wastage of steam and heat, frequent repairs and ofttimes costly interruptions to operation.

Lunkenheimer Valves will effectively guard your plant against these losses. They are designed and constructed to insure long-time satisfactory service.

If you are "valve - worried" specify "Lunkenheimer" on your next order. A thorough test in your plant will show conclusively why so many engineers have standardized on these superior products.

Distributors located in all industrial centers carry Lunkenheimer Valves and Engineering Appliances in stock. They will fill your requirements promptly.

THE LUNKENHEIMER CO.

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PROVED: VAN RAALTE

finds Monel Metal tub linings "a most profitable investment"

VAN RAALTE COMPANY
PATERSON, N. J.

May 3, 1929

Whitehead Metal Products Company
of New York, Inc.
215 Frelinghuysen Avenue
Newark, New Jersey

Attention of Mr. K. G. Barker

Gentlemen:

It was some time ago that the soaking tubs in our throwing plant were lined with Monel Metal and we are glad to inform you that the amount expended for this installation has proven to be a most profitable investment.

The troubles which often accompany wooden tubs have been entirely eliminated and the Monel Metal lined tubs which are smooth and clean at all times insures the greatest protection to the delicate threads which go into our hosiery.

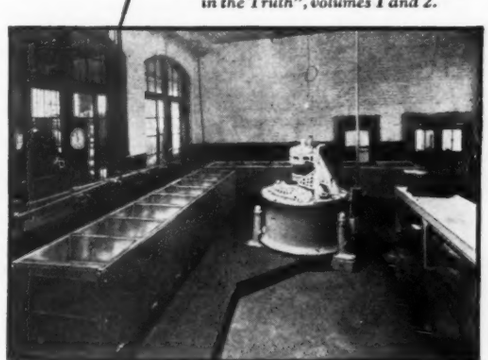
From the standpoint of appearance, we are able to keep our soaking department in much neater condition than heretofore.

From our experience with the preparation of thousands of pounds of raw silk every week, we are convinced that Monel Metal is the proper material for linings of soaking tubs.

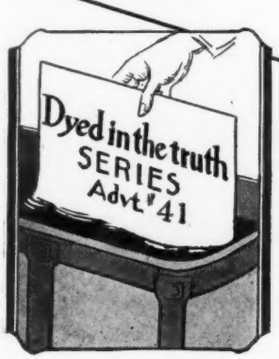
Very truly yours,
H. W. Yeast
Manager
VAN RAALTE COMPANY

HVWS
b

Send for your copies of these two booklets showing a wide variety of Monel Metal textile applications and citing many users' experiences. Ask for "Dyed in the Truth", volumes 1 and 2.



Silk soaking tubs in throwing plant of Van Raalte Company, Paterson, N. J., lined with Monel Metal by Joseph Amon of Rahway, N. J.



Monel Metal is a technically controlled Nickel-Copper alloy of high Nickel content. It is mined, smelted, refined, rolled and marketed solely by The International Nickel Company, Inc. The name "Monel Metal" is a registered trade mark.

MONEL METAL

INCo MONEL METAL

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.

Results Guaranteed!

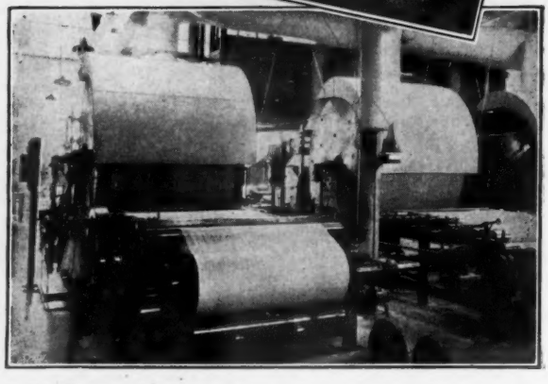
Tycos Slasher Control System Will Assure You of a Decrease in Warp Loom Stoppages

IF you install the TYCOS System of Slasher Control under the supervision of our engineers, the Taylor Instrument Companies will guarantee you a decrease in your warp loom stoppages.

* * * * *

The TYCOS System of Slasher Control has met with such success in every mill in which it has been installed, that we can now make the revolutionary guarantee stated above. So reliable the functioning of TYCOS Instruments, and so thorough the work of our engineers, that, after surveying your conditions, we can guarantee you a minimum decrease in your warp loom stoppages. This guarantee is for a minimum. The maximum savings will probably be far in excess of this figure.

Entrust your slashing to this ever vigilant system which provides control through the entire slashing process. It has been responsible for substantial savings wherever installed. It includes temperature regulators on cookers, size boxes and slashing cylinders. The warps resulting from its use are free running in the looms, and uniform. Its results are *guaranteed.*



3 Steps to SLASHER ROOM PROFITS.

Every TYCOS Mill installation embraces 3 definite steps; SURVEY, whereby your equipment is inspected, and recommendations made; ANALYSIS, chemical and microscopical, of your raw materials and slashed and unslashed yarns; INSTALLATION of TYCOS instruments with proper instruction to your workers so that they may operate them at the highest efficiency. It is only by following these three steps that our results are guaranteed.

Write today for further information. More and more mills are adopting this money saving system in the slashing process, where heretofore, costs have seemed to be immune from reduction. The sooner the System is installed, the quicker it starts saving you money. Communicate direct with the factory, or to our Southern Office, 406 Bona Allen Building, Atlanta, Georgia, or our Boston Office at 141 Milk Street.

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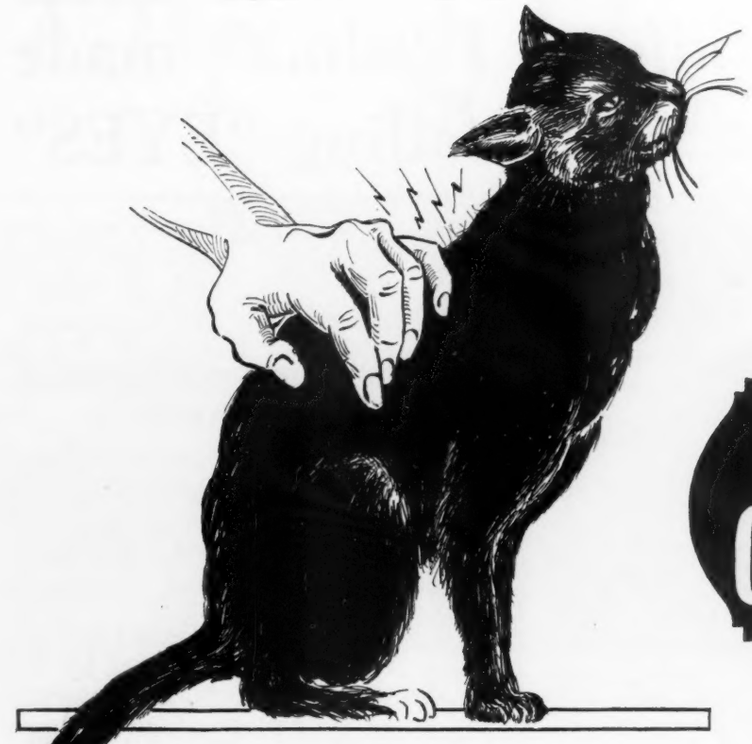
MANUFACTURING DISTRIBUTORS
IN GREAT BRITAIN
SHORT & MASON, LTD., LONDON

Tycos Slasher Control System

FOR GUARANTEED RESULTS



BRETON OILS FOR WOOL

It's the Same Static in Wool at the Cards

. . and Wool Carding cannot proceed in the presence of static!

THERE is a two-fold purpose in the application of "Breton" Oils for Wool. Not only is the generation of electricity totally prevented, but the necessary lubrication for subsequent processing of the fibre admirably effected.

"Breton" Wool Oils are perfectly emulsifiable in water, and a larger volume of solution may be expected from these brands than is the usual rule. Gallon for gallon, "Breton" Oils are not high priced . . they go further without thinning to the point of weakness and the destruction of lubricating value . . and they hold the weights uniform.

What Are Your Wool Batching Problems

Proper Lubrication at Pickers or Garnets?

Oxidization (Discoloring). ?	Washing Out . . . . . ?
Loading Up the Fillet . . . ?	Depth of Penetration . . . ?
Waste at the Cards . . . . ?	Uniform Oil Lubrication . ?
Strength of Yarn . . . . . ?	Spontaneous Ignition . . . ?

Before you decide that initial expense is a determining factor . . sample the well-known "Breton" Oils for Wool.

BORNE SCRYMSER COMPANY

17 BATTERY PLACE, NEW YORK

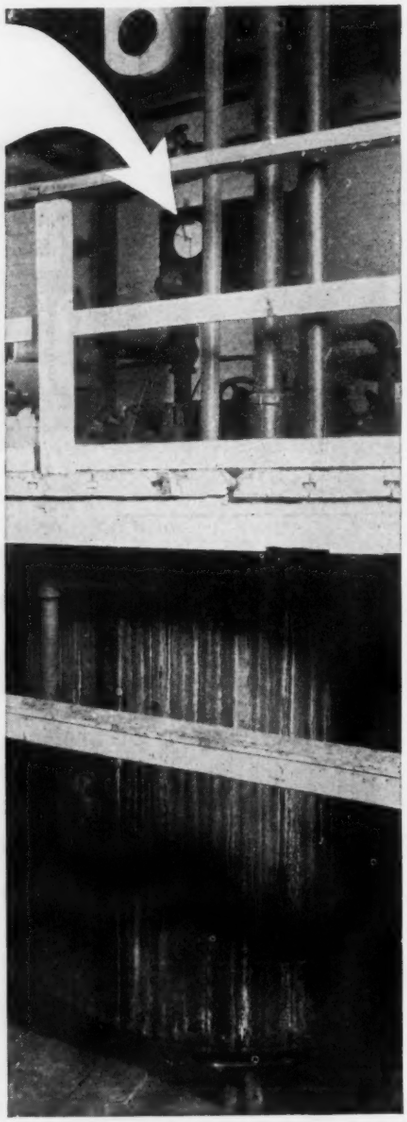
"A *Decidedly Uniform Product*" made possible by these never failing "EYES"

Foxboro Two-Pen Recording Thermometer

"THE control of our most critical manufacturing operation is guided by Foxboro Instruments," writes teh Bellman Brook Bleachery Company, Fairview, New Jersey.

"This process, which is concealed, handles millions of dollars' worth of merchandise annually, had always been both risky and hard to show uniform results. After the facts revealed by Foxboro Instruments replaced the former guesswork, this particular operation shows a decidedly uniform product. The cost of damage and reprocessing is all eliminated, and economies have also been gained in the consumption of chemicals."

"These Instruments seem AS EYES TO THE BLIND, for they permit us to see what takes place inside a closed steel vessel, and the resulting elimination of guesswork, and its waste, can scarcely be overestimated. They have never failed to perform and have cost nothing for repairs."



Foxboro Recording Thermometer on Dyeing Kier at the Bellman Brook Bleachery Company, Fairview, New Jersey.

The Bellman Brook Bleachery Company use many Foxboro Thermometers on the kiers and on other processes throughout the plant.

The same satisfactory results can be obtained by the use of Foxboro Instruments in your plant. The Foxboro Seal, guaranteeing permanent calibration, is your protection. You can be sure that the Instrument you install will faithfully and reliably perform the duty for which it was designed.

We have prepared an illustrated Booklet showing the application of Foxboro Instruments to the Textile Industry. Write for your copy today.

Foxboro Guarantee Sealed to Each Controlling and Recording Instrument.

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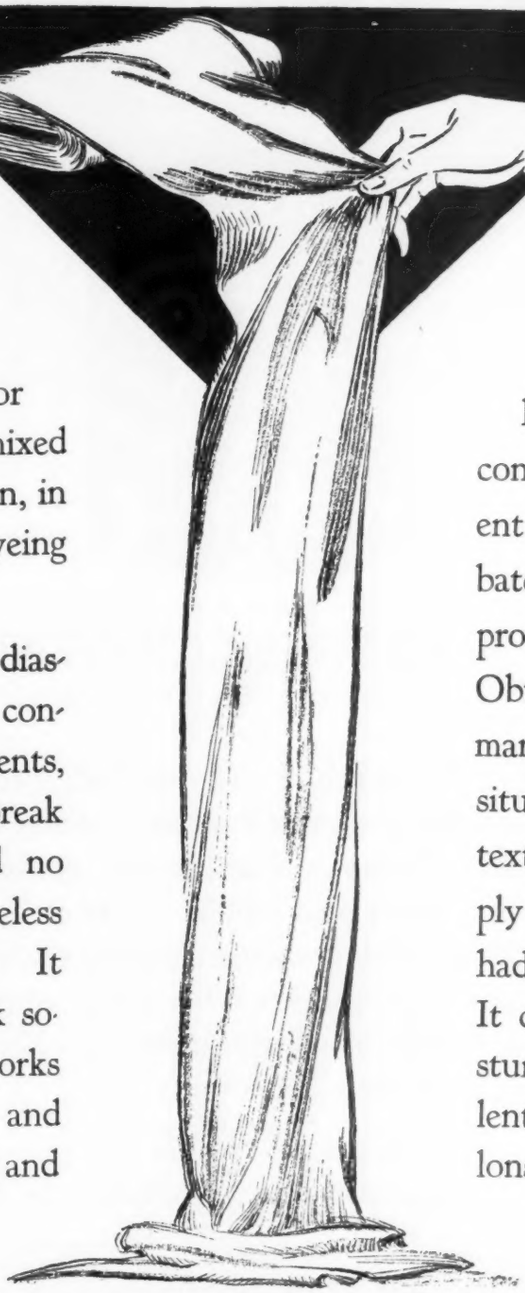
FOXBORO
REG. U. S. PAT. OFF.
THE COMPASS OF INDUSTRY

Instruments for Controlling, Recording, and Indicating Temperature, Flow, Humidity and Pressure

A Thorough Job—Soft in Fibre—Fine of Feel



That is the result of using the new thin-pouring Diastafor for stripping the warp of mixed goods, cotton and rayon, in preparing them for dyeing or bleaching.

Diastafor is a highly diastatic extract of malt, containing powerful solvents, natural enzymes to break down the starch and no properties that are useless in textile manufacture. It saves time by its quick solution in water. It works rapidly, completely and thoroughly. It is strong and very penetrating. It is easily and cleanly handled, due to its thin consistency and to the patent bung and faucet. Every batch is tested to insure a product of uniform quality. Obtainable direct from the manufacturer at warehouses situated in every important textile center. Prompt supply of any quantity can be had at a moment's notice. It comes in 50 lb. cans or sturdy oak barrels of excellent grain, holding 50 gallons.

DIASTAFOR

STANDARD BRANDS INCORPORATED

DIASTAFOR DEPARTMENT

691 Washington Street, New York City

Starch

400 MILL

FAMOUS N

500 MILL

C. P. SPECIAL

BLUE RIVER CRYSTAL

THESE starches are manufactured by carefully controlled and standardized methods. *Purity* and *uniformity* are guaranteed. *Economy* and *efficiency* are proved by the constantly increasing number of exacting textile manufacturers who are getting satisfactory results by using our starches especially selected for their conditions.

Recommendations are based upon intelligent investigation of each individual problem.

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FOR RICH AND FAST BLACKS

National Diazine Black S
A new black of unusual fastness

For the first time a domestic manufacturer is able to offer the fastest to light of all developed blacks: National Diazine Black S Extra.

* * * * *

When diazotized and developed, it possesses good fastness to perspiration, hot pressing, and washing.

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A request to any of our branch offices will bring to you complete description of this important addition to our line and instructions for its application.

National Aniline & Chemical Co., Inc.

40 Rector Street, New York, N. Y.

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SAN FRANCISCO

NATIONAL DYES

You get a softer boil when you use KAY

Send for free samples of Kay and use it for boiling out before bleaching. You will be more than satisfied with the results.

KAY gets softer boil by reducing the soda. Has slight bleaching action and if any starch is present on warps it makes the starch soluble and easily washed out.

KALPINOL
(Sulphonated Pine Oil)

for boiling out in kier before bleaching. Removes natural oil and waxes from cotton. Reduces capillary action and allows alkalies to penetrate and give good even boil which assures quicker and more uniform bleaching. Opens up the fibres to receive bleach liquor.

HYDROXY PENETRATING OILS

for dyeing, wetting out quickly, mercerizing and in the kier.

NO. 1 WARP CONDITIONER AND PENETRATOR

NO. 2 WARP CONDITIONER

These warp conditioners are especially compounded to make starch have more adhesion thus preventing shedding in the loom.

FREE *Have you received your copy of "Popular Industrial Chemistry" by James A. Branegan, Pres. Kali Mfg. Co.? Sent free on request.*

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Manufacturing Chemists
1410 N. Front Street, Phila., Pa.

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SPECIAL CREPE
TWIST RAYON YARNS
Snia-Viscosa Crepe Twist Yarns are available in 80, 100 and 150 denier sizes---standard and multifilament, on cops or spools. They are properly set and tinted, clean and elastic, with full take up.
Snia Crepe Twists will give your fabrics an attractive pebble and a luxurious hand. They are now being used with exceptional success by quality weavers everywhere.
Our technical experts are always at your service for suggestions or assistance.
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To serve you in the spirit of hospitality that has made the South so famous is our constant desire. It is a rare pleasure to make travelers from the South comfortable at the Sinton.

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Accommodations for 1200 guests. Every room with Bath and Servidor
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It Keeps
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Cotton — Grain — Stocks — Bonds

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THEY ARE MADE BY EXPERTS

in alkali chemistry; they are thoroughly tested by experts in textile production; and they have been proved in hundreds of textile plants for years.

Is it any wonder then that the

Wyandotte Quality and Service **Textile Alkalies**

are in constantly increasing demand where better appearance, brighter color, and softer texture is desired in textile fabrics?

Ask your supply man or write for further information.

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Complete Engineering Service for Textile Mills

PLANS, SPECIFICATIONS, SUPERVISION OF CONSTRUCTION, MACHINERY LAY-OUTS, LOCATION STUDIES, MANUFACTURING REPORTS, APPRAISALS

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MILL and MACHINE BRUSHES

Cotton, Woolen and Silk
Made and Repaired

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Patent Applied For *Trade Mark Registered*

THE WORLD'S BEST DEGUMMING AND BLEACHING MEDIUM FOR SILK·COTTON·RAYON

BLANCOLIT

Speedy - Thorough

"BIG SIX"

Six hours to a perfect bleach! Blancolit speeds kier time. Eliminates excess processes. Also provides notable results in degumming Silk and Rayon.

BLANCOLIT COMPANY

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GREENVILLE, SOUTH CAROLINA

DR. JOHN C. WICHMANN
President

ROBERT G. BARR
Manager

Among the attractions for guests to enjoy—

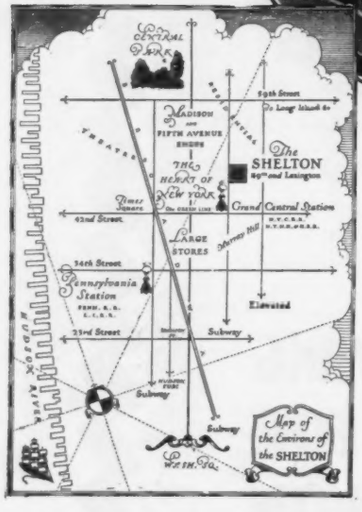
A large, crystal clear swimming pool which has made *The* SHELTON famous throughout the country. (*It is free to all guests at all hours*).

Five comfortable lounges, Solarium and roof garden for relaxation.

Completely equipped gymnasium, squash courts, bowling alleys, billiard tables and game rooms for exercise and recreation.

Fully stocked library and reading room.

And an atmostphere of refinement appreciated by all SHELTON guests.



Cotton men and their families are especially welcome

Moreover the management of The SHELTON *does not hesitate to admit that it considers your patronage particularly desirable.*

And we believe you'll like this new kind of hotel

If you know New York you know how convenient The SHELTON *is to everything in the city.*

Just a few blocks from the theatres, the stores and shops and while in all the city's many activities yet far enough out of them for you to enjoy your rest when you are ready to retire.

IT is not exactly what one expects to find in a metropolitan hotel. *It is different.* Not just another "room and bath" hotel. Instead it is more like a huge club home for men and women, with all the luxuries and characteristics of a private club.

Naturally it provides every service and convenience of any first class metropolitan hotel—but in addition the guest at *The* SHELTON is privileged to enjoy those many other unusual attractions which make your visit so much pleasanter. We will be glad to have you and your family as guests any time you are in New York. We are sure if you visit *The* SHELTON once you will want to come again—doubly sure because yours is the kind of patronage we have and we want in the hotel and we do everything we can to make your stay enjoyable, so that you will return many times.

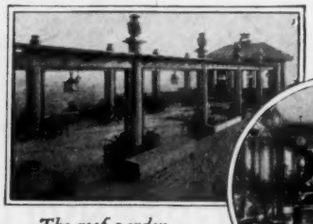
Ready for a dip in the pool

No charge for the pool
The swimming pool may be enjoyed by guests of the hotel —without charge.

The main dining room

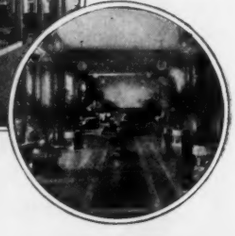
One of the five comfortable lounges to enjoy

The SHELTON
49th and Lexington
NEW YORK



The roof garden on the South Wing

The Solarium



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outstanding classes of

COTTON DYES

CHLORANTINES, direct dyes of exceptional fastness to light.

PYROGENES, sulphur dyes of brilliancy, fast to washing.

CIBA and CIBANONE COLORS, vat dyes of brilliant shades, fast to light, washing and all requirements of the trade.

We shall be glad to demonstrate these on your own goods.

333

DYES FOR MASTER DYERS

Sole Representatives in the United States for the
SOCIETY OF CHEMICAL INDUSTRY IN BASLE
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Sole Selling Agents for
DOW'S INDIGO and MIDLAND VAT BLUES

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Ciba Co. Ltd., Montreal, Canada.

Plant of Jacques Wolf & Co., Passaic, N. J.

STEP BY STEP WITH RAYON!

THRU the pioneering days, the early experimental stages to the present successful development of rayon, Jacques Wolf & Co. has marched forward step by step with the new fibre pioneers, anticipating their needs, collaborating on their problems, perfecting for their use new chemical combinations especially adapted for RAYON.

BOILING OFF	**BLEACHING**
SCOURING	**LUBRICATING**
DYEING	**SIZING**
SOFTENING	**FINISHING**

Let us help you with your rayon problems. Samples and formulas submitted upon request.

WOLF BRAND
SPECIALIZED TEXTILE CHEMICALS

JACQUES WOLF & CO.
MANUFACTURING CHEMISTS AND IMPORTERS
PASSAIC, N. J.

SOUTHERN SERVICE CENTERS

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Jacobs & Co.,

Graphic Arts Division

CLINTON — SOUTH CAROLINA

To Textile Manufacturers, Converters, Finishers, Dyers
in the United States:

Dear Sirs:

Here is how and why

WE SAVE YOU MONEY

On labels, tickets, bands, riders, advertising literature, office forms, and other printing from plates or type in one or more colors.

Our cost of manufacture is much lower than that of other good quality printing houses specializing in this work because we are in the South where working conditions are ideal and our labor-saving machinery is of the latest improved type.

We operate complete service departments in advertising, commercial art, photo-engraving in one or more colors, electrotyping, and fine printing; thus, handling all the work desired at one profit.

Many manufacturers tell us our prices are lower than what they have been paying and the quality of our work superior.

May we have the opportunity of demonstrating that we can give higher quality and better service at a saving in price?

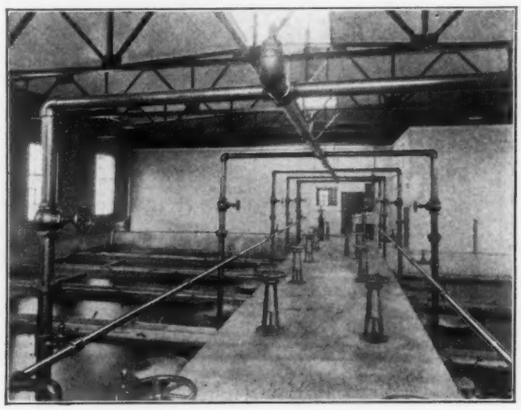
Mail us samples of work to be duplicated or write fully what is wanted, stating quantity desired and we will promptly submit estimates.

Yours very truly,

JACOBS & COMPANY,

JFJ-Jr/CF

By J. F. Jacobs, Jr.



Norwood Filters Save Thousands of Dollars!

NORWOOD Filters are saving thousands of dollars every year for their owners—saving money for scores of mills that do their own bleaching, dyeing and finishing—by improving quality, reducing expensive re-finishing, and helping to make continuous, dependable operation possible.

Norwood's three-unit filtration systems will save money for you too. With Norwood's three-unit systems, either pressure or gravity type, water can be taken into your plant directly from your river or stream and be perfectly filtered to remove pollution and foreign matter.

Automatic chemical treatment can be added to remove color and objectionable chemical content; and maintenance and operating costs will be so low as to be negligible, for one single hand wheel replaces the many complicated operating contraptions found on some systems.

Write for Norwood Filter Catalog.

Norwood Engineering Company

22 North Maple St., Florence, Mass.

NORWOOD WATER FILTERS

RAYGOMN

has solved many

RAYON SIZING PROBLEMS

WE **Invite all users of Rayon** to submit their Sizing problems to our Research Laboratories with the assurance that they will receive our most helpful cooperation.

MANY **Leading Rayon Mills** have already found that Raygomn is the most reliable and entirely satisfactory Rayon Size.

STEIN, HALL & CO. INC

285 MADISON AVENUE NEW YORK CITY

BOSTON PROVIDENCE PHILADELPHIA CHARLOTTE CHICAGO

WALKS

RIGHT THROUGH

YOUR KIER!

AFTER all is said and done, the success of a kier boil depends upon something besides a pump, a kier and temperature. That something must be in the kier liquor—a penetrating, carrying, adsorbing, cleansing power in the solution and a part of it.

What is that something?

It is a scientific combination of alkaline and colloidal properties found only in ESCOLLOID.

ESCOLLOID

When present in the kier liquor, ESCOLLOID speeds up circulation throughout the cloth, flushes cotton impurities away with it, leaves the goods perfectly bottomed. We'll gladly recommend formulas for your conditions.

ESCOLLOID is a colloidal-alkaline compound. It is a new substance entirely; a new formula made under patent specifications. ESCOLLOID supplies a high yield of active alkali under positive colloidal control. It completely differs from all other assistants, oils, mixtures, soaps, silicates, etc. ESCOLLOID comes to you in powdered form, shipped in wooden barrels, net weight 300 pounds.

COWLES CLEANERS

The COWLES DETERGENT COMPANY

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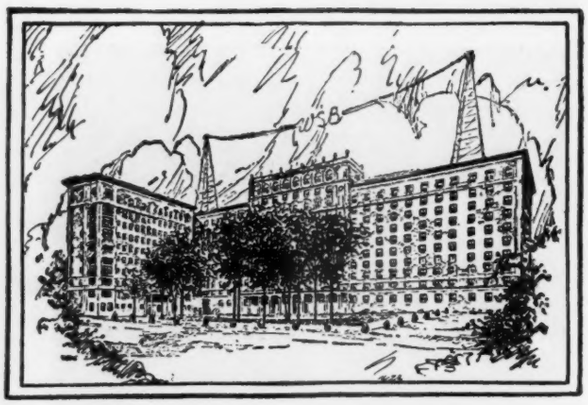


Rooms Made To Live In!

"What a joy these rooms are!" enthusiastically exclaimed a prominent visitor to Atlanta when he was shown his room.

Rooms that were designed to live in and not just to "stop" in! Every room is an outside one. All unusually large. Many of them are 21'x14', and all are tastefully furnished, avoiding the standardized arrangement common in hotels of today. No two furnished exactly alike.

The service is in keeping with the high standard set by the comfortable rooms. Here you become more than a room number. You will enjoy your visit to Atlanta more if you live at the Atlanta Biltmore while here.

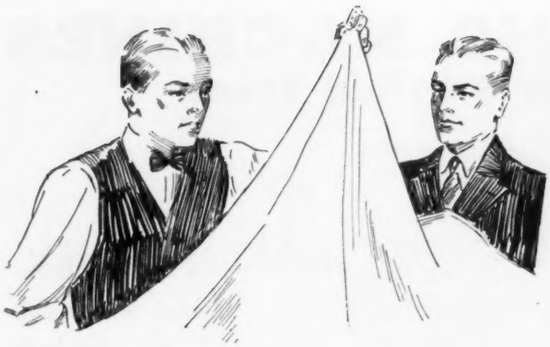
BILTMORE RATES

Single	Double
$4.00, $5.00, $6.00	$6.00, $8.00, $10.00

30 Rooms at $3.50

ATLANTA BILTMORE

"The South's Supreme Hotel"



A far softer bleach at no higher cost

THAT is the advantage a certain southern mill has gained by adding Oakite to the bleaching formula. And this mill is but one among many in which Oakite is effecting similar improvements.

Adding a small amount of Oakite to the bleaching formula substantially reduces the quantity of caustic needed. It counteracts the tendency of the bleach to cause harshness in the goods. Soft, pliable fibres . . . a fabric uniformly smoother in texture, is assured.

Let our nearest Service Man work with you on your wet-finishing problems. The chances are that he can help you save money and improve finishing results. Write and ask to have him call. No obligation, of course.

Oakite Service Men, cleaning specialists, are located in the leading industrial centers of U. S. and Canada

Manufactured only by

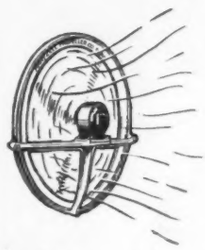
OAKITE PRODUCTS, INC., 26C Thames St., NEW YORK, N. Y.

OAKITE

TRADE MARK REG. U.S. PAT. OFF.

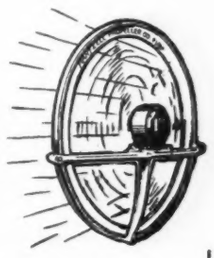
Industrial Cleaning Materials and Methods

WHIRLPOOL SUCTION or WHIRLWIND BREEZE both with CHARAVAY



In a department where fumes or bad air make working conditions unpleasant, place a Charavay in the wall—propeller pointed outward. Turn the switch, and watch. The moment the propeller starts to spin the fumes and bad air begin to move up to it. Its *whirlpool* suction reaches out with long invisible fingers, draws the bad air up and whirls it out with accuracy.

Or, place a Charavay near men working in terrific heat. Turn the propeller toward them, and watch production mount. For cooling hot jobs, for drying materials; for radiating air to every nook and reviving sluggish spirits, Charavay's *whirlwind* breeze is effective.



ONLY CHARAVAY FANS HAVE THIS FEATURE—

The Charavay airplane-type propeller and its *patented overlapping principle* make the entire surface of a Charavay fan productive of air current—*whirlpool* suction or *whirlwind* breeze, whichever your need requires.

DISTRIBUTORS

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Propeller Co.

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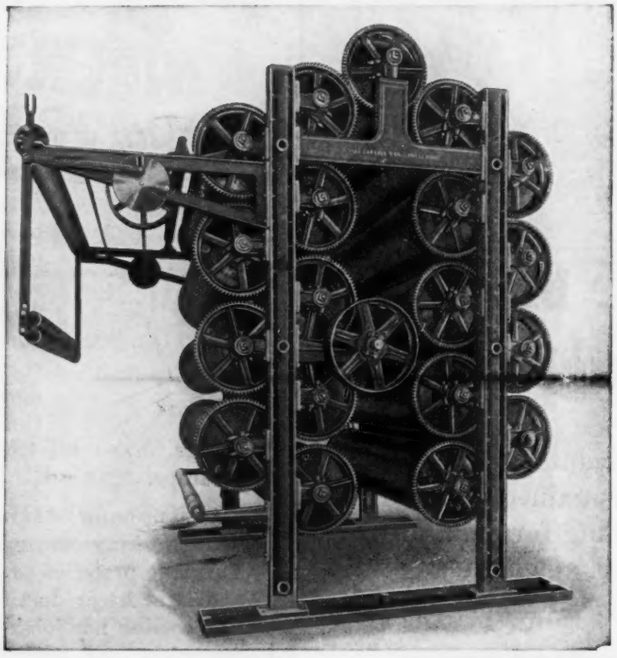
CYLINDER DRYING MACHINES

of Copper, Monel or Tinned Steel



Our machines guaranteed as to design, workmanship, and that only the best materials obtainable of the respective kinds are used.

Furnished horizontal or vertical of any required number of cylinders and varying face measurements, and arranged conforming to any particular needs.

J. E. CARROLL & CO. LOWELL, MASS.

Southern Representative: GIBBONS G. SLAUGHTER, CHARLOTTE, N. C.

DIAX

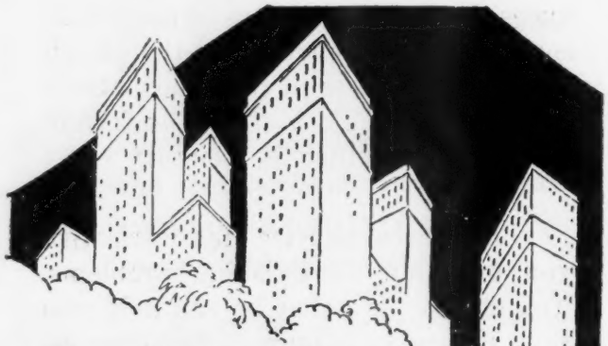
FOR REMOVING STARCHES, AND SIZING FROM COTTON AND COTTON MIXED GOODS

DIAX is the strongest concentration of the enzymes of Malt, especially prepared under practical and scientific supervision for use in the process of BLEACHING, DYEING, PRINTING, MERCERIZING, FINISHING and in the sizing and dressing of cotton yarns, etc.

DIAX, if properly used, will remove all sizing materials from the goods without shrinking or injuring them—and will leave the goods in a softer and better condition.

MALT-DIASTASE CO.

WYCOFF AVE. & DECATUR ST., BROOKLYN, N. Y.
Telephone, Jefferson 6000



HOTELS of the DINKLER CHAIN

ATLANTA, The Ansley
ATLANTA, The Louis Dinkler
(New 1000 room hotel under construction)
BIRMINGHAM, The Tutwiler, The Redmont
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Carling L. Dinkler
Pres.

Operated by

DINKLER HOTELS, *INC.*

Dispensers of True Southern Hospitality

has withstood the rigid test of time

It— deposits an elastic coat on the yarn;
withstands rubbing and chafing;
minimizes shredding;
strengthens the yarn against breakage;
materially assists production.

JOHN P. MARSTON COMPANY
247 Atlantic Ave., Boston, Mass.

Make Your Warp Size Give Good Results

B & L Bleaching Oil Produces a Foundation for a Pure White on Cotton

DIFFICULTIES in connection with bleaching and dyeing can very often be traced to the slasher room where sizing compounds of questionable composition are used.

To take care of these difficulties use *Victrolyn*, a lubricating, penetrating, concentrated assistant that mixes with size uniformly. It displaces everything but starch and water, making possible cleaner and more satisfactory work. Only five pounds of *Victrolyn* are mixed with 300 gallons of size to give these results. Comes in iron drums and 10 gallon cans.

Bosson & Lane
SOLE MANUFACTURERS
Atlantic, Mass.

VICTROLYN

Reg. U. S. Patent Office

113 Years of Experience at Your Service

Specialists

**WARP DRESSINGS,
FINISHING MATERIALS,
SOAPS, SOLUBLE OILS, ETC.**

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Rooms with private bath and shower from $3.00 per day

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Near West Philadelphia Station
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The American Plan of Machinery Extension

¶The cotton mill or the worsted mill that does not increase the number of looms per weaver—with a consequent lower cost of production—will, under average conditions, be unable to compete with mills that are on this American plan of stretching out the machinery.

¶**HAMACO,** the scientifically converted starch product, is a vital ingredient in warp preparation if the weaving is to be stretched out. **HAMACO** not only saves a lot of money in the cost of operating the slasher room, but it also prepares perfect warps, increases breaking strength in the looms, and increases the number of looms per weaver.

¶And, best of all, the weavers appreciate the difference in the warps.

HABERLAND MFG. CO.

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Boston, Mass.
30 Bay State Road

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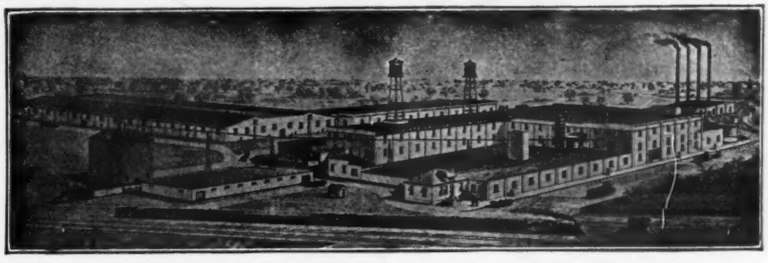
519 Johnston Bldg.



VICTOR MILL STARCH

The Weaver's Friend

It boils thin—it penetrates the warp—increases breaking strength and carries the weight into the cloth. Being thoroughly washed free of gluten and other foreign matter it gives a bleach and finish to the goods that you can get from no other starch.

A trial order will convince you that VICTOR STARCH has no equal on the market.

THE KEEVER STARCH COMPANY, Columbus, Ohio

Southern Agent: MR. DANIEL H. WALLACE, Greenville, S. C.

If you are not already using VICTOR STARCH call on our representative for a demonstration at your convenience.

For Softer Yarn

Laurel

Olive Oil Emulsion "A"

. . . a softener that adds and holds lustre and makes self-lubricating . . . therefore easy knitting . . . yarn.

If it didn't give markedly satisfactory results, so many mills would not be regularly re-ordering in larger quantities.

Ask us about special trial offer.

Laurel Soap Mfg. Co.

INCORPORATED

WM. H. BERTOLET & SONS

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BECCO

ELECTROLYTIC HYDROGEN PEROXIDE

100 VOLUME

FOREMOST IN UNIFORMITY
FOREMOST IN STABILITY

Put BECCO to any test and be convinced.

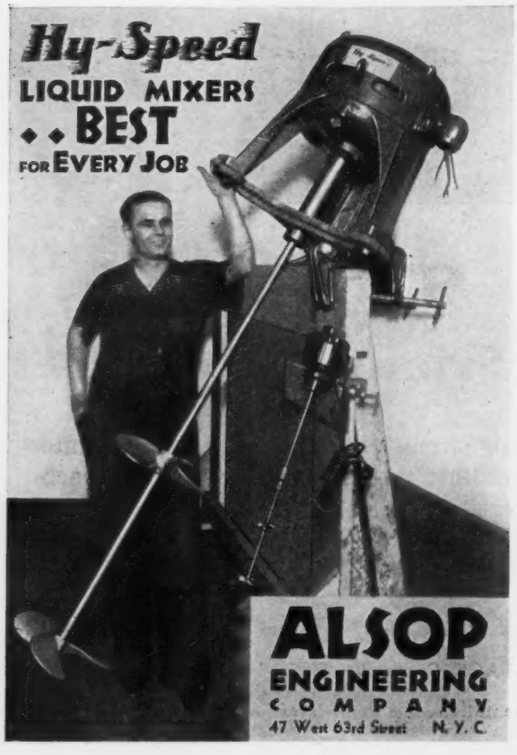
Ask us to demonstrate BECCO bleaching at your mill, without obligation, or, if you prefer, send us samples for laboratory processing with BECCO.

BUFFALO ELECTRO-CHEMICAL CO., Inc.

STATION B. BUFFALO, N. Y.

BLEACH BETTER WITH BECCO

Hy-Speed
LIQUID MIXERS
BEST
FOR EVERY JOB



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Liquid EBG Chlorine

The service is equal to the product.
In 100 and 150 pound Cylinders,
Ton Drums, and Tank Cars.

Electro Bleaching Gas Co.

PIONEER MANUFACTURERS of LIQUID CHLORINE

Plant: NIAGARA FALLS, N.Y.

Main office 9 East 41st Street New York

Franklin Machine Co.

Engineers—Founders—Machinists

Providence, R. I.

Machinery for Dyeing Rayon in the Skein
Ball Winding Machines
Textile Printing Machines
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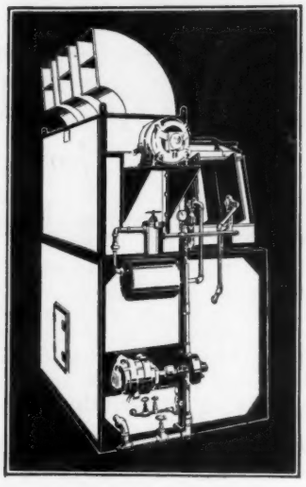
YORK
Air-Conditioning Unit



opens new profit possibilities

DEVELOPMENT of this remarkable Unit brings complete, automatic air conditioning down to a simple definite business proposition that a man can sink his teeth into and understand. *It makes of air conditioning a problem no more complex than the purchase of any single other piece of plant machinery.* Installation is no problem. The Unit is connected to water, electric and steam lines. Controls are set and it's ready to operate. There is no central system. There are no distributing ducts. Just a Unit—or two, or three, or more as may be, in one or several departments, working independently. Naturally, it costs less this way than by older methods. The result is a perfectly conditioned department or plant. *And that means more profitable production!* Write us for more complete information. *York Heating & Ventilating Corp'n, 1555 Sansom Street, Phila.*

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YORK HEATING
& VENTILATING CORP'N
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TEXTILE MILL
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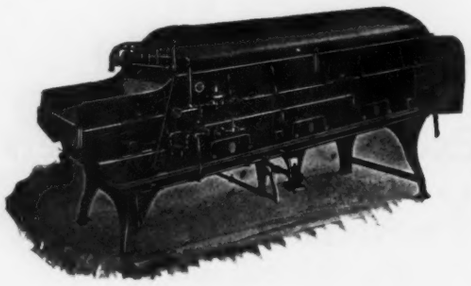

Sargent's Yarn Conditioning Machines are

Found in Practically All Of The Leading Textile Mills

that condition filling yarns.

One to six minutes exposure in this machine will thoroughly set the twist in practically all types of filling yarns so that no trouble will be experienced from kinky filling. This machine is also used for putting the proper amount of moisture in the yarns. It does not harm the yarn in any way nor does it damage the bobbins.

This machine is not in an experimental stage as it has been used by mills for approximately thirty years. Many mills have five or six of these machines and from the fact that we get many repeat orders proves that it has given satisfaction.

Other machinery manufactured by us include Continuous Automatic Extracting Machines, Raw Stock Drying Machines, Automatic Feeds and many others.

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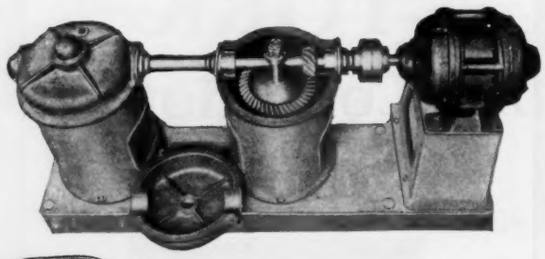
GRANITEVILLE, MASS.

F H. White, So. Agent
Charlotte, N. C.

R. C. Jefferson, Phila. Agent
Drexel Bldg.,
Philadelphia, Pennsylvania

SARGENT

YARN CONDITIONING MACHINES



ALL PURPOSE MACHINES FOR ALL PURPOSES
AUSSONG INCORPORATED 1907

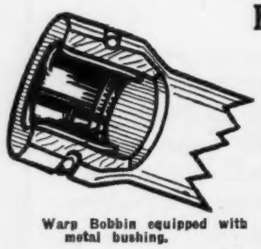
New Type "M" Head

for

Circulating Dyeing Machines

Direct motor driven head effects economies impossible with the old chain driven type . . . . Main drive, with hypoid spiral bevel gears, mounted on a shaft running continuously through housing . . . . Equal load distributed on all pinions . . . . Write for folder giving full details.

AUSSONG
DYEING MACHINE COMPANY
INCORPORATED IN 1907
GROVEVILLE, N. J.

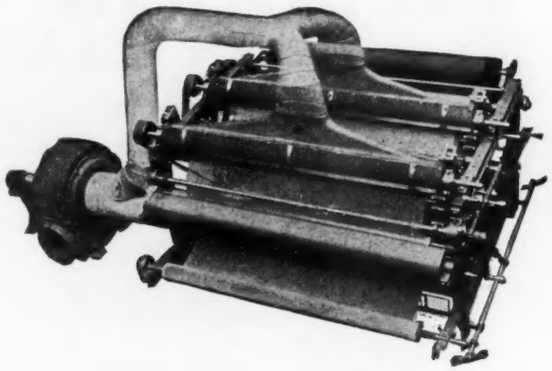


Warp Bobbin equipped with metal bushing.

Keeping Bobbins Same Height on Spindles

Textile Shield Company metal bushings protect all kinds of bobbins from shrinkage, keeping them the same height on the spindles. Let us prove this to you.

TEXTILE SHIELD CO.
Metal Stampings *Screw Machine Products*
The Shield of Protection
GROTON ST. Lawrence, Mass.
J. Norman Anderson, Proprietor



HERMAS

New Improved

TRIMMING MACHINE

Are You Following the Most Up-to-Date Method in Trimming?

Without doubt the Hermas New Improved Trimming Machine will handle your trimming requirements at much greater savings, at much greater speed, with much greater efficiency than the hand method.

Hundreds of Hermas Machines are installed in the leading mills of the textile world. They clean selvage and body of cloth at savings of 60% to 70%. Equipped with a patented suction that draws ends into the knives, leaving the cloth in perfect condition. Practically no upkeep. Low first cost. Write for information.

HERMAS MACHINE CO., *Warburton Ave. at Susquehanna, R. R.* HAWTHORNE, N. J.

Southern Representatives
CAROLINA SPECIALTY CO., Charlotte, N. C.

European Representatives
TEXTILE ACCESSORIES, LIMITED, Manchester, Eng.

[Direct photograph of Sonoco Dytex Tube that has been used in Package Dyeing]

"SONOCO" *Dytex Tubes:*

Economical and most Satisfactory with the use of any dyes:

These tubes are made of paper specially treated by processes exclusively our own. *No metal is used,* hence there is no discoloration of yarn:

Many representative mills throughout the country are now supplying yarn on Sonoco Dytex Tubes.

SONOCO PRODUCTS COMPANY, Mfr.

CONES, TUBES AND CLOTH-WINDING CORES

Sonoco "Velvet Surface" Cone and Sonoco "Underclearer Roll"

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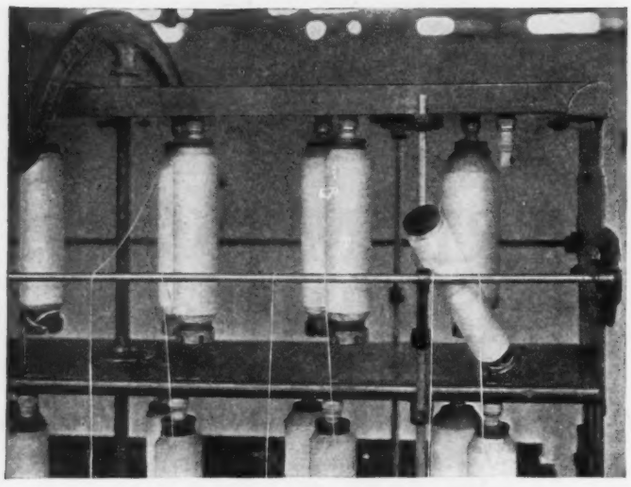
NEW BEDFORD, MASS.

MAIN OFFICE AND FACTORY
Hartsville, S. C.

W. J. WESTAWAY CO., Ltd.
HAMILTON, ONT.



Clear the decks

Go in your spinning or roving room. Look along the tops of the middle and bottom creel boards. Are they fly encumbered?

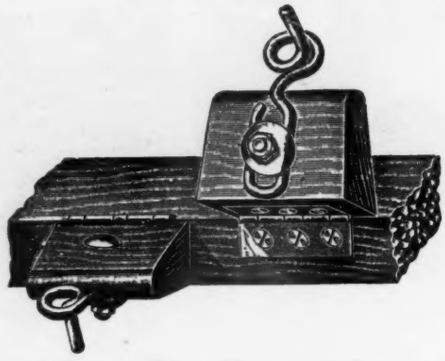
Do away with this troublesome accumulation of lint or fly. Eliminate the wooden skewers around which fly gathers like bees around a hive. The Eclipse Bobbin Holder is the answer. This Eclipse development *suspends* the bobbins from the top of the creel board. The ball bearing construction insures smooth running—*better yarn.*

It won't cost you a cent to have one of these holders sent you for examination. *Write now.*

ECLIPSE TEXTILE DEVICES, INC.
Elmira, N. Y.

ECLIPSE Bobbin Holder

The Palmer Adjustable Thread Guide



For Ring Spinning and Twisting Frames

Easily Adjusted.

Extreme Accuracy and Performance of setting.

Cheapest of them all.

Mail guide-block for free sample.

Patented and Manufactured by

THE I. E. PALMER COMPANY

Middletown, - - - Connecticut

PROGRESSIVE MILL MEN EQUIP THEIR UP-TO-DATE LOOMS WITH K-A ELECTRICAL WARP STOPS

Wm. D. Whittaker
P. O. Box 2063

Haas Howell Bldg.,
Atlanta, Ga.

Southern Representative of

R. I. WARP STOP EQUIPMENT CO.
PAWTUCKET, R. I.

A Girl of Poise . . . a picker stick of long life

Just as one of the attributes of the unusual girl is poise—so is long life one of the attributes of Pioneer Picker Sticks.

Fifty-three years in the Hickory products business has taught us the value of producing and manufacturing only one brand. Hence we can and do guarantee every stick we ship.

Send for sample—no obligation

THE PIONEER POLE & SHAFT CO.
Memphis, Tenn.

The Right Porcelain Guides

No. 750

is the first item to be considered for the highest efficiency.

Write today for samples or catalog.

Manufactured by
PAGE-MADDEN COMPANY,
INCORPORATED
277 RALPH AVENUE
BROOKLYN, N. Y.

No. 651

The Superior

PORCELAIN
FOR TEXTILE MACHINES

The Extra-wear Spinning Ring

DIAMOND FINISH

Aim at what you want!

If your present rings have outlived their period of maximum service, you are sure to get faster, smoother production and better quality by installing new DIAMOND FINISH Rings. Check up your spinning and twister rings! Aim with determination for the speed and quality that mean profits. New rings will help you make a "killing!"

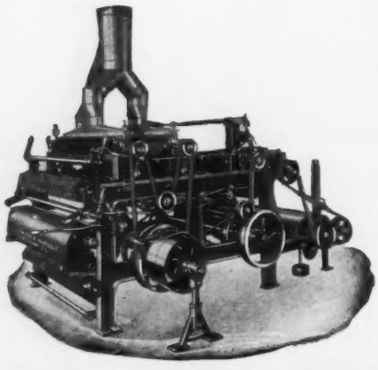
Samples gladly sent.

Whitinsville (Mass.) SPINNING RING CO.

Devoted to making "DIAMOND FINISH" Spinning and Twister Rings Since

1873

Type C Shearing Machine



Removes loose threads from surface and selvages of the goods

Large production due to high speed of the cloth

Continuous operation when run with Unrolling Frame, which has Sewing Machine and Scray

This type C Shear may be arranged with any number of cutters and also brushes and other cleaning appliances. Strong suction to draw threads into the cutters.
Built in all common widths.

Cloth Room and Packaging Machinery

CURTIS & MARBLE MACHINE CO.

72 Cambridge St.
WORCESTER, MASS.

Southern Office GREENVILLE, S. C.

THE CENTRIF-AIR

Adjustable Cotton Cleaning System

frees cotton from motes, heavy leaf particles and sand the same as other cleaners—then removes rocks, metal, glass, seed and other hard materials heavier than the cotton; also light dust and pulverized leaf which cannot be removed by any other machine known to the textile industry.

Ask the mills now using it!

The Centrif-Air Machine Co., Inc.
Atlanta Georgia

KERLOW

GRATING PRODUCTS

KERLOW STEEL FLOORING CO
222-238 CULVER AVE.
JERSEY CITY, N.J.

Non-Slipping

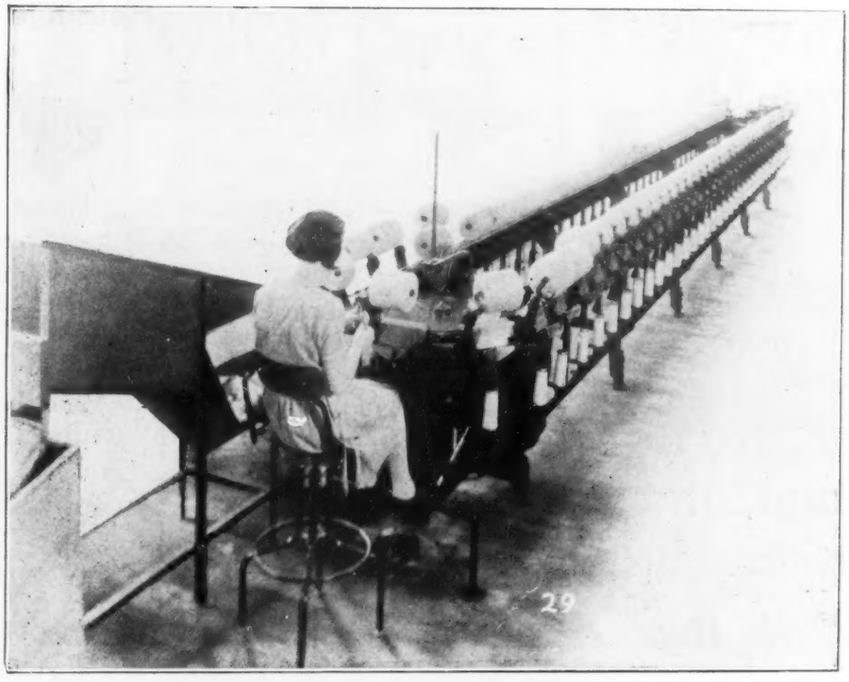
"ATLANTA"

HARNESSES and REEDS

"Quality and Service That Satisfies"

ATLANTA HARNESS & REED MFG. CO.
ATLANTA, GA.
P. O. Box 1375
Telephone Main 0517

If winding were just winding---we could offer you only another winder---at competitive prices



Winding, however, affects the methods and costs of every subsequent process. Twisting — Creeling —Warping—Dyeing —Inspection— Weaving—are all vitally affected by the type and cost of winding.

Can you afford to ignore a revolutionary winding development?

A letter will bring Bulletin 102 and a practical salesman.

ABBOTT MACHINE CO.
Wilton, N. H.

"HIGH GRADE"

Bobbins, Spools and Shuttles

OF
EVERY
DESCRIPTION

THE DAVID BROWN COMPANY
Lawrence, Mass.

Correspondence Solicited *Catalogue on Request*

Birmingham, Ala. Greenville, S. C. Charlotte, N. C. Gastonia, N. C.
Chattanooga, Tenn. Dallas, Tex. Griffin, Ga.

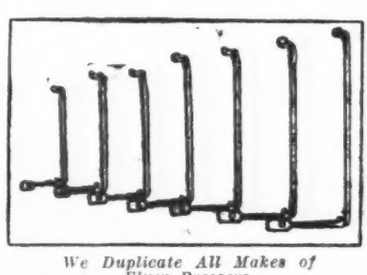
HEADQUARTERS for QUALITY LOOM HARNESSES

The close proximity of this company to the textile field, the quality and service always present, is causing many mill men to make National their headquarters for Loom Harnesses.

COTTON HARNESS constructed of new cable yarns which produce superior quality on all kinds of plain and fancy weaves in cotton and silk goods.

Write for information.

NATIONAL LOOM HARNESS CO.
P.O. BOX 2163 ATLANTA, GA.



We Duplicate All Makes of Flyer Pressers.

WE DO
REPAIRING
OVERHAULING
MANUFACTURING

Just a bit better than is absolutely necessary!

Therefore our continuous popularity with the textile industry.

Let Us Show You!

Our third of a century's experience is the guarantee back of all our work.

Southern Spindle & Flyer Co., Inc.
Charlotte, N. C.
Manufacturers, Overhaulers and Repairers of
COTTON MILL MACHINERY
W. H. MONTY, Pres. and Treas. P. S. MONTY V.-Pres., and Sec.

ANNOUNCEMENT

Shambow Shuttle Company has the pleasure of announcing that

MR. JOSEPH COBB

formerly connected with the Southern Textile Association, has been selected as its representative *in the South.*

Our old and new customers will find the same service and courtesy available to them at all times.

Our office and warehouse will continue to be maintained at Greenville, South Carolina.

SHAMBOW
Shuttles Exclusively
SHUTTLE - COMPANY
WOONSOCKET, R.I.
GREENVILLE, S.C. PATERSON, N.J.

Keep Your Calender Rolls in their Housings

Roy Calender Roll Grinder grinds rolls absolutely true without removal from housings. The best results can only be obtained when rolls are ground in their own bearings.

Here is an inexpensive machine that has paid for itself many times in hundreds of mills.

Advice on grinding always promptly and cheerfully given.

B. S. ROY & SON CO.
Established 1868
WORCESTER, MASS., U. S. A.

ROY TEXTILE GRINDING MACHINERY

It Defies Vibration

Says the superintendent of a prominent New England mill: "To anyone who knows the rough usage that a bolt or nut gets on a picking motion of a loom, the fact of having a nut stay on a bolt in this particular place for over two years is a striking example of what the PERMA-TITE Self Locking Nut will stand . . . "

Let this nut prevent costly breakdowns in your mill. It's the locking wire that does the trick. Simple, but fool-proof. Get sample.

INDUSTRIAL LOCK NUT CO.
South Hanover, Mass.

Patented Sept. 7, 1920

PERMA-TITE *The Self-Locking Nut*

Every Cotton Mill Executive, Superintendent and Head of Department Should Have the

"SPINNERS' HANDY DATA BOOK"

It covers in a detailed and thorough manner all calculations necessary to be made in the Spinning of Cotton Yarns and constitutes one of the best references on this subject available.

75 pages of plain, practical calculations, rules and tables that come up every day.

As the value of a book lies in its contents and not in a fancy cover, we have put it out in a strong, serviceable paper binding and can thus offer it to you with a subscription to "COTTON" without any extra cost over the regular subscription price.

Size of book, 3 x 6 inches.

Positive Weight Control

. . . . . with actual increase of production speed.

Because of their extreme accuracy in fast production "EXACT WEIGHT" SCALES adapt themselves readily to the requirements of the textile industry. They offer positive weight control at each point in your production line. . . . Quickly save their cost in time and materials.

"EXACT WEIGHT" SCALES

May we send descriptive literature? No obligation.

The
EXACT WEIGHT SCALE CO.
2211 W. Spring St.
Columbus, Ohio.

Spinning, Speeder and Mule Rolls

Renecked, Refluted and Honed

Sole Patentee and User of
George A. Bates Patented Flute Raising Machine, for raising worn out Drawing Rolls or Comber Detaching Rolls

Guaranteed not to change diameter of roll

George A. Bates & Son

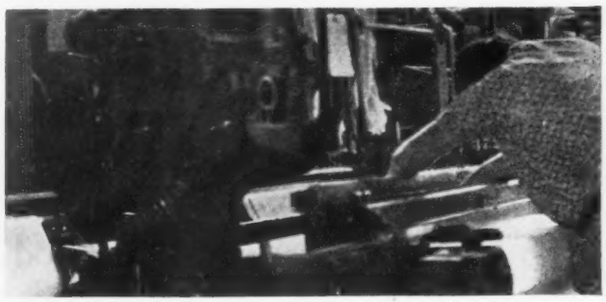
Established 1893
Quality and Service
868 Broadway - - - - Fall River, Mass.

REG. U. S. PAT. OFF.

ROLLER CALF

R. NEUMANN & CO.
Hoboken, N. J.
Direct Factory Representatives in the South
SOUTHERN TEXTILE SPECIALTY CO., GREENVILLE, S. C.

This is that New Tri-Color Harness



Chafeless Cord, the improved cotton harness with the perfect finish, is identified by its striking Tri-Color band of red, green and yellow. It is the mark of better "cover."

The trend towards improved quality has placed a premium on good cover. It has long been a common saying in the trade that cotton harness builds good cover. Because of natural advantages of softness and flexibility, cotton harness is preferred by mills whose pride and profits come from quality weaves.

What really determines the value of cotton harness is its finish, and it is right here that Emmons Cotton Loom Harness manifests its superiority. Finishing, as we do it, is not merely a surface operation. The twine has to be specially prepared first so that all the fibres are laid flat and parallel. This gives a perfect foundation for the varnish, a base that is smooth from the very first. Nothing but high grade varnish, cut with pure turpentine, is used by Emmons.

How it is Obtained

To assure a surface that is uniformly smooth, each coat is scientifically applied by modern machinery designed to our own specifications. Irregularities are thus eliminated. Each coat is baked for eight hours at a temperature of 175 degrees Fahrenheit. Five coats are thus applied and baked. Then the harness is made impervious to moisture by a special over-dressing.

This careful treatment, not duplicated in any other harness, makes Emmons harness different. It is the quality and permanence of the finish that determines the life of the harness. It is the lasting smoothness of Emmons harness which eliminates fly and builds up cover. The glass-like smoothness of this improved harness slips freely through the warp. Friction is lessened, for this finish is flexible and faultlessly smooth. Consequently warp breakage and loom stops are substantially reduced.

Send for Sample Set

Superintendents interested in improving the appearance of their weaves and building good cover can obtain a sample set of this improved harness. Equip a loom with Chafeless Cord and note the results. Write now for this trial set with the Tri-Color band. It will show the way to improved cover.

CHAFELESS CORD
EMMONS LOOM HARNESS CO.
the TRI-COLOR HARNESS

CLIP AND MAIL

EMMONS

Loom Harness Co.
133 May St., Lawrence, Mass.

The attached memorandum on our letterhead gives the necessary data for the sample set, which please ship without charge for our trial, as per ad in November COTTON.

"Cotton Harness builds good Cover"

Name _____

Established 1848

JAS. H. BILLINGTON CO.

Manufacturers of

Penna, Rock Maple Bobbins
Penna, Rock Maple Spools
Mountain Dogwood and Persimmon Shuttles
"Danforth" Pure Oak Short Lap Leather Belt
"Batavia" Rawhide Loom Pickers

Buy from the Manufacturer Direct

113 CHESTNUT ST., PHILADELPHIA, PA.

IMMEDIATE SHIPMENTS ON General Electric Products

For more than twenty years we have rendered to Industrial Georgia a service that has been second to none. We maintain a complete stock of General Electric and other Standard Lines at both our Atlanta and Savannah Warehouses and shipments are almost invariably made the day order is received.

DISTRIBUTING GE JOBBER

General Electric Supply Corporation
Formerly Carter Electric Company
ATLANTA SAVANNAH

GREIST DROP WIRES

Our Satin finish eliminates all chafing of yarn and prevents the collection of waste, lint and fly, thus adding materially to the proper performance of warp stop motions and incidentally the efficiency of your weaving.

The Greist Manufacturing Co.
NEW HAVEN, CONN.

A. B. Carter, Inc.
Gastonia, N. C.
Southern Representative

Russell A. Singleton Co.,
Dallas, Texas.
Southwestern Representative

Striking Advantages of Our Textile Cost Methods—

—Absolute dependability for selling purposes in any market.
—Simplicity, which makes it unnecessary to increaes your office staff to handle the cost system.
—We do not experiment in costs at your expense.

Fully 25% of All Cotton Textile Spindles in the United States are Operated by Clients Using Our Cost Methods.

RALPH E. LOPER & CO.
INDUSTRIAL ENGINEERS
Specialists in Textile Cost Methods Over 16 Years
FALL RIVER, MASS. GREENVILLE, S. C.

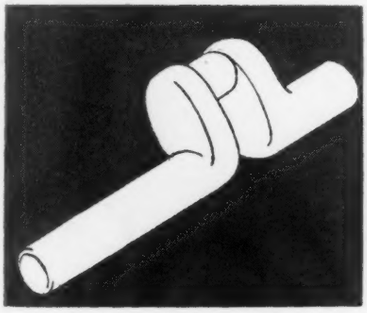
There shouldn't be an idle loom due to crankshaft breakage!

Idle looms mean idle hands, production losses and no profits. If such conditions exist because of broken crankshafts, they can be easily remedied by replacing with Babbitt Loom Crankshafts.

An exclusive Babbitt machine employed in a special bending, upsetting and squeezing process — a process that introduces 50% more metal in the bend—is used in putting "strength where strength is needed" in all Babbitt Loom Crankshafts.

Careful attention is given to the accuracy of sizes, quality of finish, service on special dimension orders and quick deliveries.

Order Babbitt Loom Crankshafts for replacement—they'll set a new standard for crankshaft economy—starting with the first cost.



BABBITT BROTHERS

Established 1891

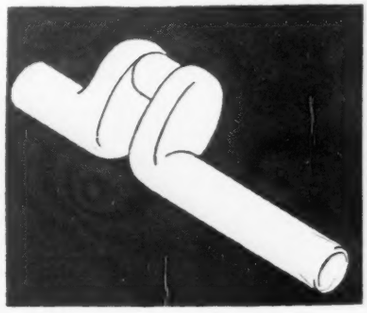
FAIRHAVEN, MASS.

Southern Representative

E. D. Roy, Box 298, Greenville, S. C.

BABBITT

LOOM CRANKSHAFTS



Prevent

CEILING CONDENSATION WITH CELOTEX INSULATION

Dripping ceilings damage fabrics, rust expensive machinery, rot roof structures.

These serious losses are being ended in hundreds of mills by insulating roofs with Celotex. Celotex shuts out all extremes of temperature and also reduces fuel expense.

Write us for the most recent technical data on Celotex for textile mills.

THE CELOTEX COMPANY

919 North Michigan Avenue Chicago, Illinois

CELOTEX

BRAND

INSULATING CANE BOARD

A Right Size for Every Mill

There are eight different models in the FINNELL line ranging in price from $87.50 to $950. Large open areas might need the largest. Small congested areas might need the smallest. The average mill might need one in between. Let us survey your floors and help you select the one that will do the best work for you at lowest cost. For particulars address FINNELL SYSTEM, INC., 1311 East St., Elkhart, Ind.

FINNELL

ELECTRIC FLOOR MACHINE

It's Easy to Ship Textiles

We repeat—it is easy to ship textiles safely and economically if you take advantage of available refinements. You may feel that it is anything but easy—with materials so easily damaged—so popular to pilfer, etc. The fact remains, however, that thru the use of the Signode System of Tensional Steel Strapping we have shown hundreds of textile mills how to ship more safely and practically eliminate pilfering and in most cases have also shown a reduction in costs. Ask for demonstration or catalog No. 15T. There's not the slightest obligation.

SIGNODE STEEL STRAPPING CO.

2620 N. Western Ave., Chicago, Ill., U. S. A.

Canadian Steel Strapping Co., Ltd., Montreal, Quebec

Offices in Principal Cities

SIGNODE

***The* Sealed Steel Strapping**

We also manufacture round wire tensional reinforcements, all forms of nailed-on strapping, wire tying machines, pail clasps, clutch nails, tag fasteners, etc. Write for general catalog.

Mundet Jointite Cork Board

TRADE MARK

Workmen applying Mundet "Jointite" Cork Board Insulation to the saw tooth roofing of the American Enka Corporation, Asheville, N. C.

Write for Bulletin 37b4

Bulletin 37b4 shows how we covered the roofing of the 75 acre plant of the American Enka Corp., Asheville, N. C., using more than 1,000,000 board feet of Mundet "Jointite" Cork Board—the ideal insulation for any textile. roof. The bulletin contains valuable information. Write for a copy.

L. MUNDET & SON, Inc.

Established 1865

461 EIGHTH AVENUE NEW YORK CITY

"All Roofs Need Insulation"

"KNITTING KINKS"

A Valuable Handbook on the Operation and Adjustment of Knitting Machines

CONTENTS

CHAPTER I—ADJUSTING THE MODEL K MACHINE—

Fitting a Pawl Controller Shoe No. 7426.
Fitting a Drum Pawl.
Setting a Main Pawl.
Fitting a Left-Hand and Right-hand Up-Pick.
Fitting a Down-Pick.
Fitting a Stitch Cam Bracket.
Fitting a New Welt Presser.
Fitting an Outside Sinker Ring.
Fitting an Inside Sinker Ring.
Fitting a Chain Pawl.
Fitting a Center Cam.
Fitting a Left-Hand Stitch Cam.
Fitting a Right-Hand Stitch Cam.
Throw of Dial Needles.

CHAPTER II—ADJUSTING COMMON DIFFICULTIES—

Needles Breaking Almost Anywhere.
Needle Importance.
Machine Becoming Stuck.
Putting Machine Together Correctly.
Centering Up a Dial.
Sizing Up Work.
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Yarn Tensions.
Slack Course.
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Setting Sinker Cams.
Breakage of Transfer Jacks.
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CHAPTER III—ADJUSTING COMMON DIFFICULTIES—

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CHAPTER IV—ADJUSTING COMMON DIFFICULTIES—

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Welt Puckered Up.
Breaking Needles in Heel and Toe.

CHAPTER V—ADJUSTING THE MODEL R I MACHINE—

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The Cylinder Needles.
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Fastening the Dial.
Pile-Ups.
Puckered Streaks.
Outside Sinker Ring.
Taking All Sinkers Out of Machine.
Cut-Outs in Heel and Toe.

SPECIAL OFFER

As the value of a book lies in its contents and not in a fancy cover, we have put "Knitting Kinks Hand Book Number One" out in a strong, serviceable paper binding and can thus offer it to you FREE with a one year subscription to "COTTON" at the regular subscription rate of $1.00 in the United States and Mexico. To Canada $1.50. Foreign Countries $2.00.

COTTON, Grant Bldg., Atlanta, Ga.

A new sweep to speed work on mill floors

HERE'S the new twin floor sweep, designed especially for textile mills. With a pair of these sweeps, a cleaner can cover his alleys in a fraction of the time required before; can sweep cleaner, too. Note how the two fit together in a V-shape carrying all lint and dust ahead, with fewer back strokes. They are sized to cover the width of an alley. They're obtainable in 12 inch, 14 inch, 16 and 18 inch widths to suit every need.

The 54 inch handle screws in either end of sweep, so as to allow the two brushes to exchange positions and wear evenly on all sides. Brush fiber made of long-wearing Bahia Bass, securely seated.

You'll find this new model a profitable piece of equipment. A pair of the new sweeps will save time and do better cleaning. Prices and further details on request. Ask for Sweep number 39.

Atlanta Brush Co.

P. O. Box 1358, Atlanta, Ga.

For every textile need, we make a suitable brush

"An Excellent Investment"—

writes another mill owner in Georgia. "But it would be with us even if it did nothing more than prevent the extreme dusty condition that usually exists around the cards. It makes cleaner fillets and eliminates dust. It is a great safety device and it makes it easier to train new card hands."

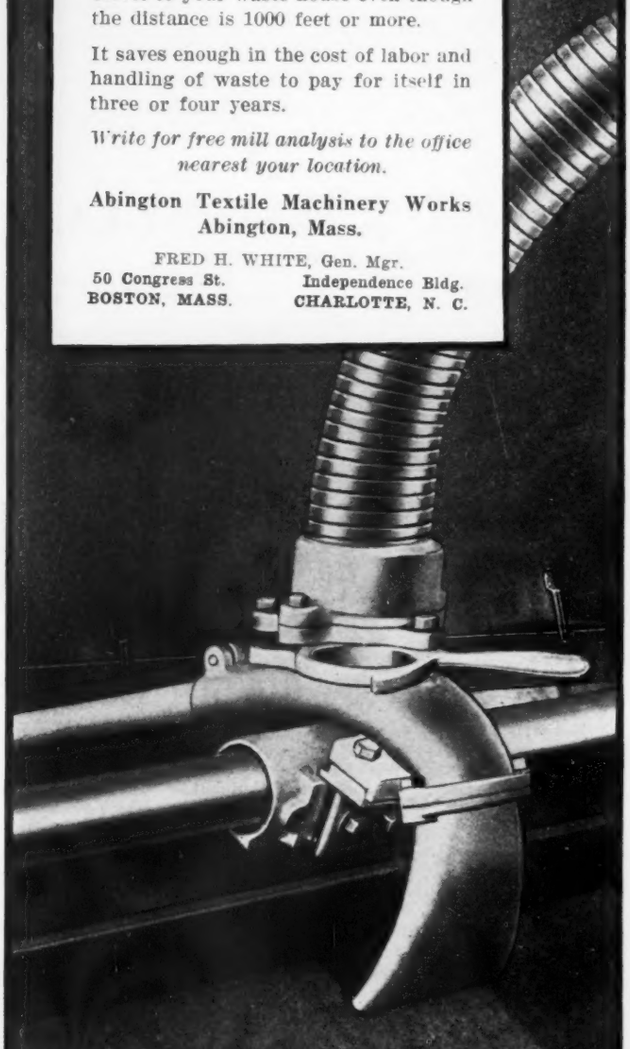
Here is a system that strips your cards automatically—4 at a time—without stopping the cylinders. It cleans by vacuum every machine in every department of your mill and conveys the waste direct to your waste house even though the distance is 1000 feet or more.

It saves enough in the cost of labor and handling of waste to pay for itself in three or four years.

Write for free mill analysis to the office nearest your location.

Abington Textile Machinery Works
Abington, Mass.

FRED H. WHITE, Gen. Mgr.
50 Congress St. BOSTON, MASS.
Independence Bldg. CHARLOTTE, N. C.



COOK-GOLDSMITH

PATENT

TRIPLE VACUUM SYSTEM

AN UP-TO-DATE PRINTING PLANT

equipped with modern machinery and a staff of competent workmen, solicits, thru this publication, a trial order on your printing needs.

We have built a reputation that is known over the entire South by our special attention to the minutest detail.

We are more than ready to answer any question that relates to your printing problems.

Write us and let us quote you on anything from a postal card to a full bound book.

The A. J. Showalter Co.
PRINTERS AND PUBLISHERS
DALTON GEORGIA

Why are some firms remembered on orders, and others forgotten?

When selecting firms to which orders go, buyers are identical.

They remember the ones which have impressed them—and forget the ones which haven't.

It's surprising to note how big a point a business card is when it comes to remembering.

For the salesman's cards that the buyers *save* must preach the gospel of quality, prestige, and fitness long after the salesman has departed. Doing this, they point to the firms most entitled to confidence and orders.

Such is the reward of prestige!

You will learn and profit by knowing what kind of business cards preserve prestige. A request from you will bring samples.

The John B. Wiggins Company
(*Established 1857*)
1171 Fullerton Ave., Chicago

WIGGINS
Peerless Book Form
CARDS

Classified Advertising

RATES—DISPLAYED

"For Sale," Positions Open, Agents Wanted and all other advertisements using bold face type or otherwise displayed, $6.00 per column inch per insertion.

Rates for larger spaces furnished on application.

WITHOUT DISPLAY

"Positions Wanted" advertisements, 5 cents per word per insertion. Minimum charge $1.00. Payable in advance.

(When replies are to be received in our care allow eight words for box address.)

Extractor Bargains — **Rebuilt and Tested in Our Own Shops at Newark, N. J.**

1—60″ Tolhurst, motor belt driven.
1—54″ Troy, copper basket, NEW.
2—48″ Tolhurst, copper baskets.
3—40″ Tolhurst, copper baskets.
80—32″ to 12″ sizes, copper baskets, standard makes.
Truck and Skein Dryers, Pumps, Boilers, Copper Kettles.

CONSOLIDATED PRODUCTS CO., Inc.
14-17 Park Row, New York City Barclay 0600

FOR SALE

For sale cheap, twenty-four 64″ Modified "D" Draper looms purchased new in 1924 and run for 3½ years. Suitable for Enameling Ducks, Osnaburgs and Grograin; also have new equipment for four-harness drill motion. Excellent operating condition. Address Box 40, care COTTON, Grant Bldg., Atlanta, Ga.

DO YOU WANT TO SELL IT?

Probably you, like many other mills, have some equipment which you have taken out or are thinking of taking out and replacing with new equipment.

Why not dispose of this second-hand machinery at a profit. COTTON is read by thousands of cotton mills that are hardly touched by Northern journals.

You Can Sell Your Second-Hand Equipment

to these mills through advertising in the Classified Advertising Section of COTTON. Such advertising produces results at small cost—why not get that second-hand equipment off your hands in a profitable way? Tell us what you have for sale and let us insert an advertisement.

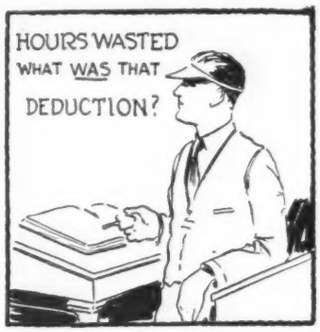
COTTON
Grant Bldg., Atlanta, Ga.

SALES REPRESENTATIVES

A CLIENT of ours, manufacturing chemists for the textile industry, national in scope, has vacancies for experienced representatives who have a large following among the cotton weaving mills, to promote the sale of scientifically conceived warp dressings. This advertisement is directed to men who are eager to be connected with a reputable, aggressive organization with unlimited opportunity for greater earning power. Replies will not be considered unless complete information is given in first letter as to qualifications, age, territory covered, and references. All replies will be treated as strictly confidential. The organization of our clients is fully cognizant of this advertisement.

STREET & FINNEY, Advertising,
40 West 40th Street, New York City

Get the Verdict of Your Pay Roll Department



Ask them what they think of a pay envelope that will actually serve as: (1) A time and wage statement, (2) A deduction statement, (3) A pay envelope, and (4) An employee receipt.

Better still—dictate a memo to us requesting samples, and then see for yourself how well this time-saving, money-saving, worry-saving envelope will fit into your scheme of things. The Four-in-One is used and recommended by large business establishments in all sections of the United States.

May we send the samples—by mail?

ATLANTA ENVELOPE CO.
Manufacturers of the Patented Four-in-One Pay Envelope
505-7-9-11 Stewart Ave. S.W. Atlanta, Ga.

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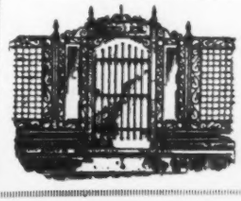

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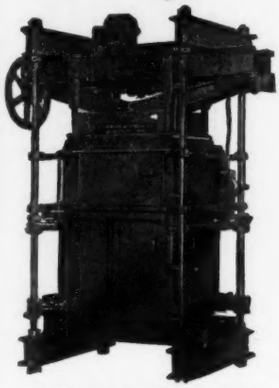

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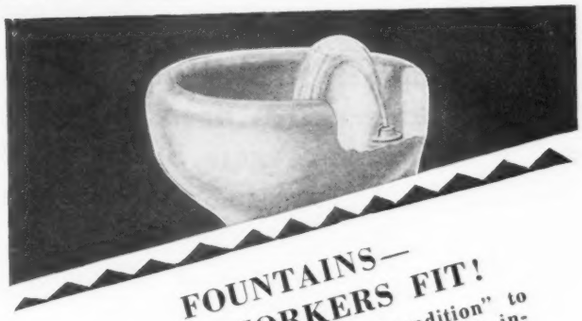

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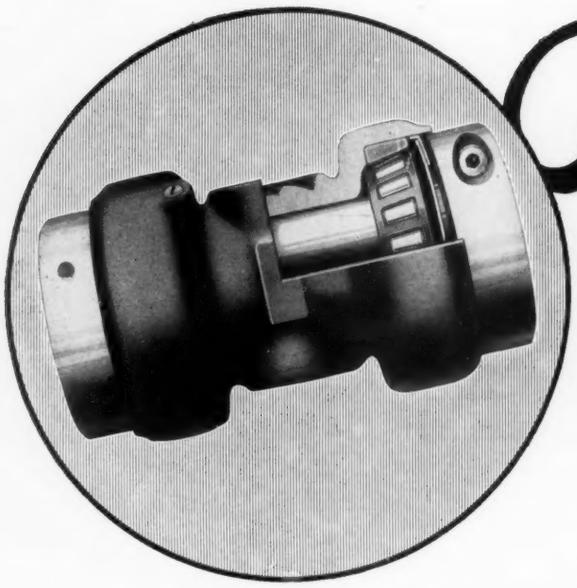

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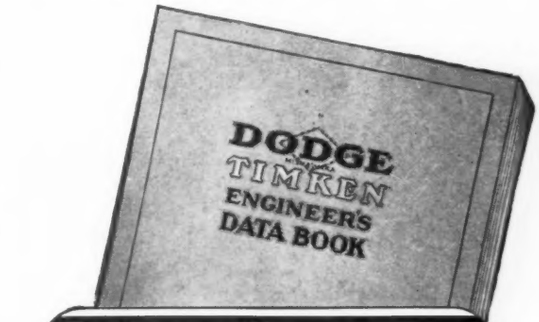

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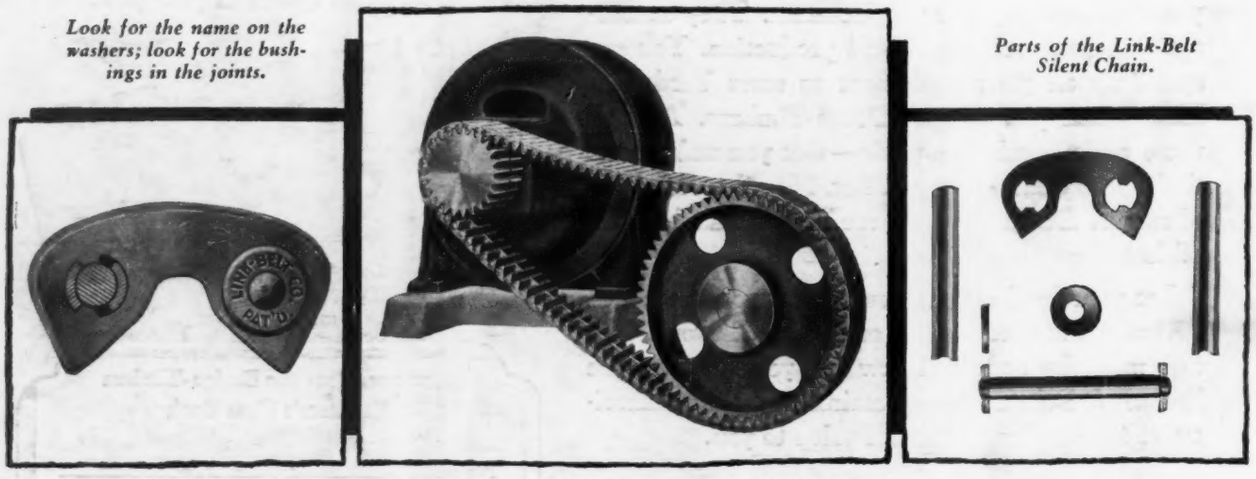

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